



Drainage Reports

NOTES
(1). RETENTION CALCULATIONS ARE FOR (PRE VS. POST OR FIRST FLUSH, WHICHEVER IS GREATER).
(2). CALCULATION IS BASED ON THE FIRST 1/2" OF RAINFALL.
(3). RAINFALL DEPTH IS PER NOAA ATLAS 14, VOLUME 1, VERSION 5.
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PRE-DEVELOPMENT VS. POST DEVELOPMENT FOR THE 100-YR, 2 HOUR STORM EVENT (1)						FIRST FLUSH	
WEIGHTED RUNOFF COEFFICIENT, C _w			VOLUME REQUIRED, CF V=PxA/C/12 (1) RAINFALL DEPTH, P = 2.14" (3) AREA = 192,943 SF			VOLUME REQUIRED, CF V=PxA/12 RAINFALL DEPTH, P=0.5" (2) AREA=192,943 SF (5)	
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(4)	IMPERVIOUS	0.95	181,385	172,316			
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TOTAL				8,122	

DRAINAGE STATEMENT

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LEGEND

- PROPERTY LINE
 - EASEMENT LINE
 - MONUMENT LINE
 - WATER METER
 - WATER VALVE
 - FIRE HYDRANT
 - SEWER CLEANOUT
 - LIGHT POLE
 - SEWER MANHOLE
 - STORM DRAIN INLET
 - TRANSFORMER
 - TELE COMMUNICATIONS PEDESTAL
 - CATV, PHONE
 - GAS LINE
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 - SEWER LINE
 - WATER LINE
 - ELECTRIC LINE
 - EXISTING CONTOUR
- PROPOSED SLOPE DIRECTION
PROPOSED SPOT ELEVATION
PROPOSED CONTOUR
FLOW LINE
STORM DRAIN PIPE
CATCH BASIN
DRYWELL
DRAINAGE EASEMENT AREA

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN IS SITUATED (IN) SCOTTSDALE, IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:
LOT 1, A PROPERTY ASSEMBLAGE IN THE CITY OF SCOTTSDALE, ACCORDING TO BOOK 815 OF MAPS, PAGE 7, RECORDS OF MARICOPA COUNTY, ARIZONA LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

APN: 129-13-002G, 129-13-002K, 129-13-003D, 129-13-002J, 129-13-004D, 129-13-004E

BASIS OF BEARINGS

THE MONUMENT LINE OF SCOTTSDALE ROAD THE BEARING OF WHICH IS N00°00'00"W, AS SHOWN ON THE PLAT OF MARK MITSUBISHI, RECORDED IN BOOK 815, PAGE 7, MCR.

BENCHMARK

BRASS CAP IN HAND HOLE AT THE INTERSECTION OF SCOTTSDALE RD AND MCDOWELL ROAD HAVING AN ELEVATION OF 1230.69, CITY OF SCOTTSDALE DATUM, NAVD 88 DATUM, BM# 5032

FLOOD INSURANCE RATE MAP (FIRM) DATA

COMMUNITY #	PANEL #	SUFFIX	BASE FLOOD ELEVATION
045012	2235 OF 4425	L	N/A
MAP #	PANEL DATE	ZONE	X*
04013C	10/16/2015	X*	

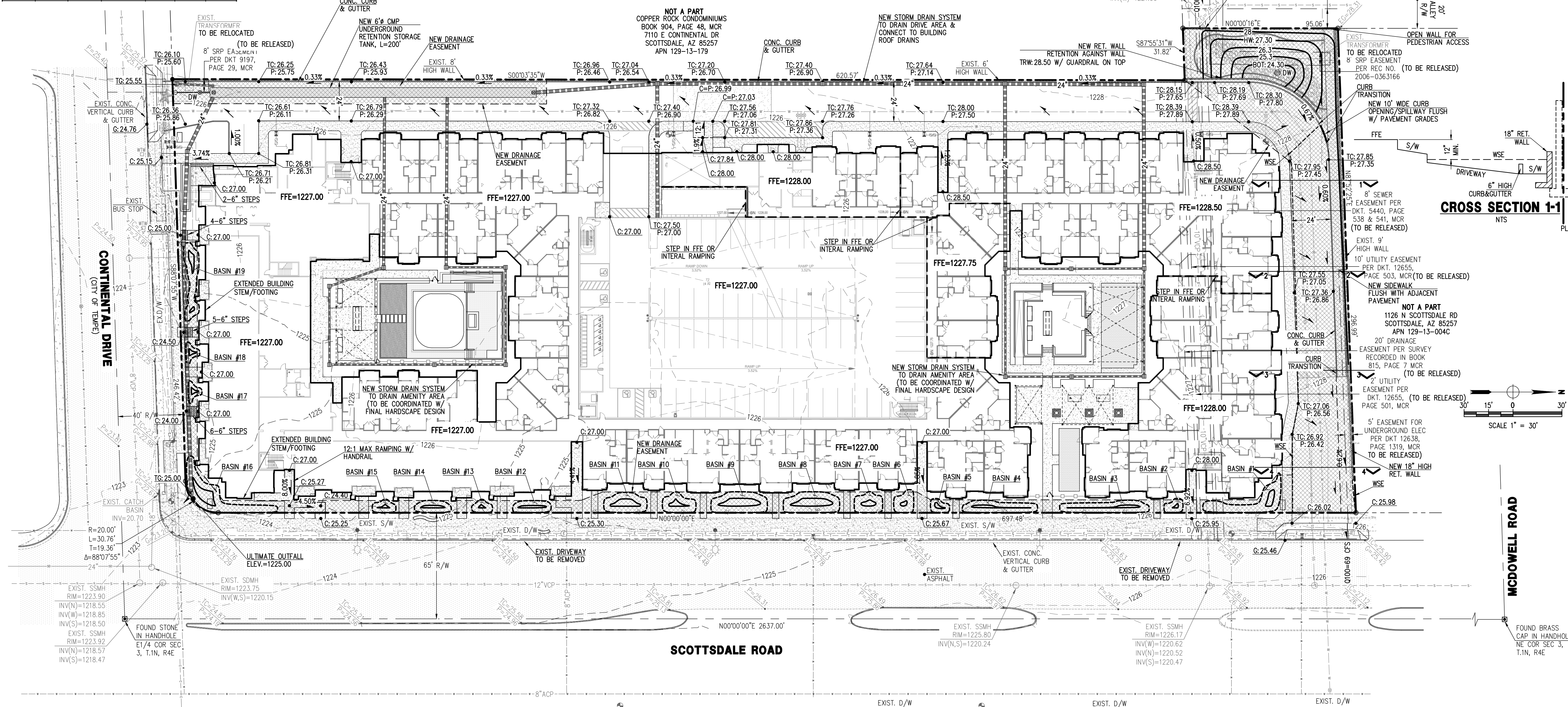
*AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

SITE DATA

APN: 129-13-002G, 129-13-003E, 129-13-003D, 129-13-004D
ADDRESS: 1000 N SCOTTSDALE RD., SCOTTSDALE, AZ 85257
LOT AREA: 192,943 S.F. (4.429 AC.)
Q.S.: 12-44

CROSS SECTION 1-1

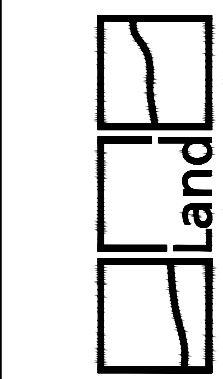
NTS



PRELIMINARY GRADING & DRAINAGE PLAN

ALTA CONTINENTAL 1000 N SCOTTSDALE RD., SCOTTSDALE, AZ 85257

P 602 889 1984 | F 602 445 9482
8808 N CENTRAL AVE., SUITE 288
PHOENIX, AZ 85020
PHOENIX @ LOGIC GROUP



PGD-1

1 OF 2

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- WATER LINE
- ELECTRIC LINE
- FIRE LINE

EXIST. SSMH
RIM=1225.88
INV(E)=1220.18
INV(W)=1220.28

PRELIMINARY WATER & SEWER PLAN

ALTA CONTINENTAL

1000 N SCOTTSDALE RD., SCOTTSDALE, AZ 85257

SUBDIVISION PLAT LOCATED WITHIN A PORTION OF THE E 1/2 OF THE SE 1/4 OF THE NE 1/4 OF SECTION 11, T.3N, R.4E OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA

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BASIS OF BEARINGS

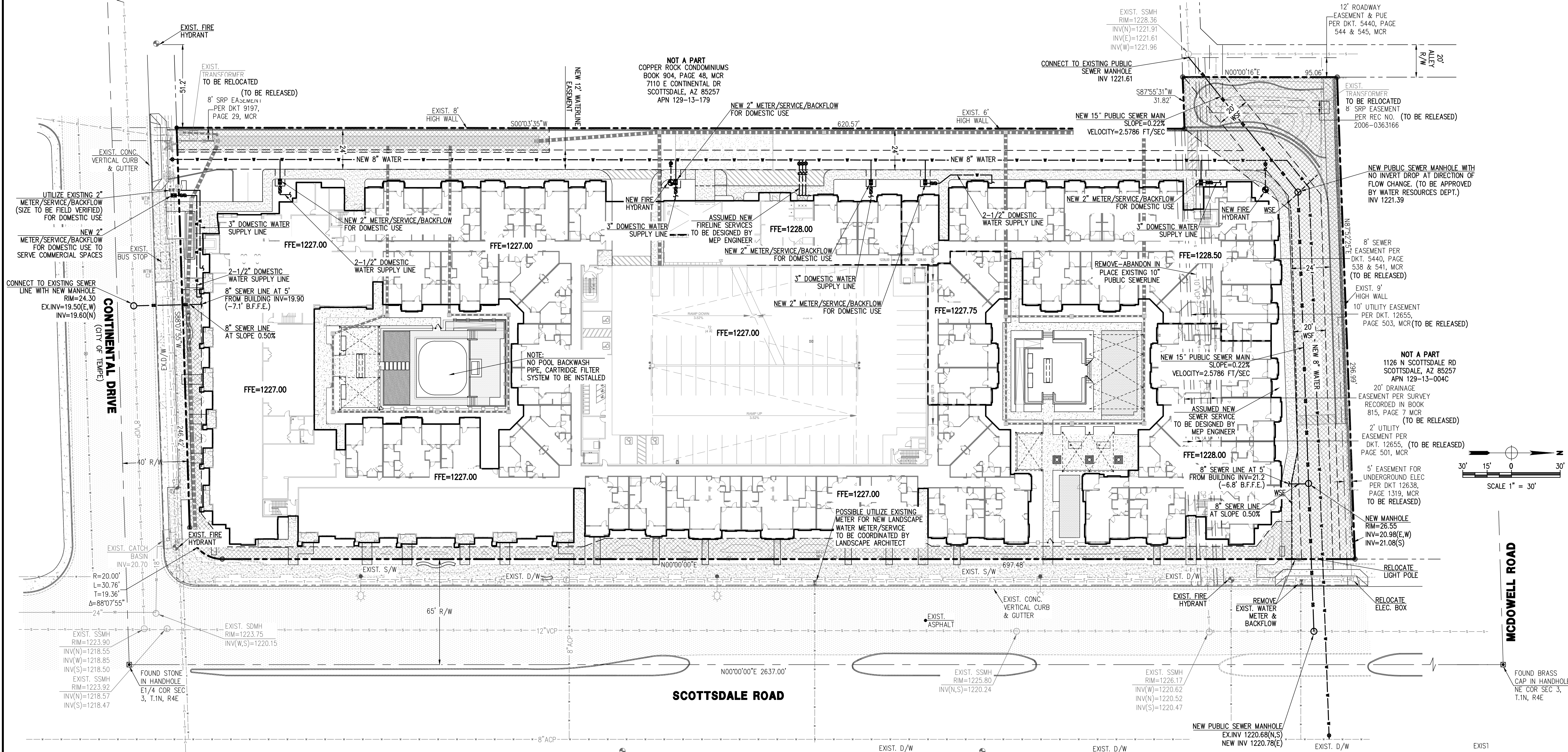
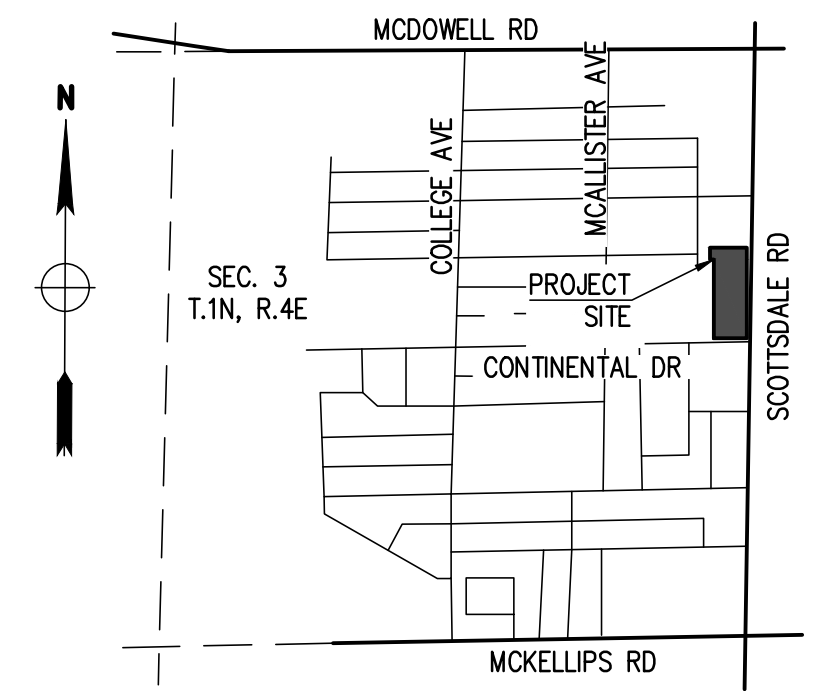
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VICINITY MAP

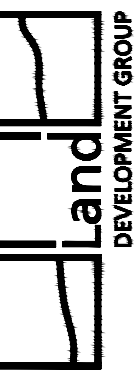
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PHOENIX @ LDENG.COM



PWS

1 OF 1

14-ZN-2018
9/1/2020



PRELIMINARY DRAINAGE REPORT

ALTA CONTINENTAL NWC of Scottsdale Road & Continental Drive 1000 N Scottsdale Road Scottsdale, AZ 85257

CASE NO. 14-ZN-2018

LDG PROJECT #2004085

Prepared for:

Five Star Development / Wood Partners

Submitted to:

City of Scottsdale
Planning & Development Department
7447 E. Indian School Rd, Suite 105
Scottsdale, AZ 85251

Stormwater review by
Richard Anderson

Prepared by:

Land Development Group, LLC
8808 N. Central Avenue, Suite 288
Phoenix, Arizona 85020
Contact: Nick Prodanov, PE, PMP
P: 602 889 1984



June 16th, 2020

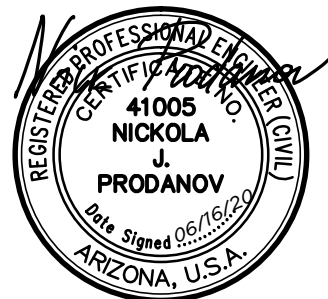
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Include a copy of the
approved g/d plan for
Scottsdale Datsun
from prior reports in
this report.



June 16th, 2020

REVISED AS
REQUESTED

1. INTRODUCTION

This preliminary drainage report and related grading and drainage plan have been developed in accordance with the current Maricopa County and City of Scottsdale drainage ordinances, standards and policies. It provides engineering analysis and assessment of the existing and proposed drainage conditions that affect the subject development, located at 1000 N Scottsdale Road, Scottsdale, AZ 85257.

The parcel is located within the Scottsdale Q.S. 12-44 and is being a portion of the SE ¼ of the NE ¼ of Section 3, Township 1 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to Appendix A-1 – Vicinity Map.

The project site consists of a fully developed parcels, with a total area of 4.429 acres, located at the northwest corner of Scottsdale Road and Continental Drive – 1000 N Scottsdale Road, Scottsdale, AZ 85257. The property historically housed car dealerships. It is zoned C-3 and it is bounded by Continental Drive on the south, Scottsdale Road on the east, a commercial development on the north, and multifamily residential development on the west.

The proposed mixed-use development consists of 4-story building with roughly 280 multi-family residential units and roughly 10,000 s.f. of commercial space, parking garage and driveways. Vehicular circulation is provided by two driveway entrances on the northeast and southwest sides of the site and a 24' wide drive that is continuous around the building from the north and west sides. Surface parking is provided in the parking garage.

The analysis presented herein focuses on evaluating existing and proposed drainage conditions, as well as stormwater runoff resulting from a statistical evaluation of storm events of particular frequency, up to and including 100-year event as required by the Governing Agency. A storm event exceeding the 100-year will probably cause or create the risk of a greater storm impact than is presented and addressed herein. The procedures used herein are derived from, and performed with, currently accepted engineering methodologies and practices.

2. DESCRIPTION OF EXISTING DRAINAGE CONDITIONS AND CHARACTERISTICS

A field survey and visual reconnaissance inspection was conducted in April, 2020 to observe and collect information regarding the existing topographic characteristics, drainage conditions, document any local disturbances to the historic flows, and location and condition of the existing storm drainage structures and conveyance corridors. A topographic map was developed with a one-foot contour interval for the site and the adjacent streets. The elevation contours and survey spot elevations are tied to the section monuments and are based on the City of Scottsdale vertical datum (NAVD'88). City of Scottsdale and Maricopa County topography maps were reviewed for evaluation of offsite tributary areas.

CORRECTED

are two ?

The overall existing terrain on site is flat with overall grade change from north to south at about 3'. Parking areas are sloped away from the building. No retention basins were observed on site. A single chamber dry well is located near the Scottsdale Road right of way. There existing 4.3'x1.4' and 3.9'x1.4' drainage openings in the west wall, near the northwest corner of the site. Based on review of existing drainage plans for the development, the intent is to accept the offsite flows coming from northwest and to route them to the east via a concrete valley gutter with ultimate discharge onto Scottsdale Road. A 20' drainage easement running west to east confirms our findings although currently the alignment of the valley gutter does not line up with the limits of the drainage easement.

The drainage report for the development review submittal will need to provide a hydrologic analysis for these off-site flows as the ADMS is a planning level study that is not necessarily suitable for design.

Per the obtained data from Flood Control District of Maricopa County and based on the FLO-2D results of the Lower Indian Bend Wash Area Drainage Master Study, 69 cfs could potentially reach the northwest in southerly, diversions and with the prop and reduce th

ADMS RESULTS ARE MORE CONSERVATIVE THAN WHAT WE HAVE DETERMINED BASED ON THE ACTUAL LIMITS OF THE WATERSHED AND THE DDMWS RESULTS.

e FLO-2D exhibits show the offsite flows to traverse the site direction. The model does not take into account local flow influences. Conveyance of the offsite flows will be maintained the intent to provide some attenuation of the offsite flows instream properties.

Scottsdale Road slopes in southerly direction with an average slope of 0.4%. Continental Drive slopes in easterly direction with an average slope of 0.8%. Surrounding streets are asphalt paved and have a typical crown cross section with concrete curb and gutter constructed at the edge of the pavement. There is an existing 11' long curb inlet at the NWC of the intersection of Scottsdale Road and Continental. The inlet is connected to an 18" storm drain pipe, that conveys the flows further south to a 24" storm drain main, which is a part of the City of Tempe storm drain system. Existing driveway entrances are raised above the adjacent top of curb elevations, preventing of street runoff to enter the site.

3. FEMA FLOOD ZONE CLASSIFICATION

Site is located in Flood Zone "X" according to Flood Insurance Rate Map (FIRM) #: 045012, Panel 2235, Suffix L, dated October 16th, 2015, as published by FEMA. The FIRM Panels defines Zone "X" as follows: "Areas determined to be outside the 0.2% annual chance floodplain".

See Appendix A-2 for FEMA Flood Insurance Rate Map exhibit.

4. PROPOSED DRAINAGE PLAN

Grading and drainage plan shows the proposed grades and slopes away from the building, collection of the on-site runoff and proposed conveyance of the offsite flows that reach the site. Computations have been performed to estimate the runoff coefficients from the Existing (Pre) and the Proposed (Post) conditions. Due to the currently fully developed with hardscape surfaces parcel, the proposed project will have a post dev. runoff coefficient that is less than the pre-development coefficient. On-lot retention is provided through underground tanks and surface retention basins and is designed to retain the first flush on-site. Runoff collected by the proposed

NOTED ON THE PLAN
AND RAN CROSS
SECTIONS HYDRAULICS

catch basins and routing piping will be stored in underground storm water storage tank and released into the soil through an engineered dry well. Since the post development runoff will be less than the current and the historic conditions, the stormwater runoff that would leave the site and spill over onto the City's right of way and storm drain system will be significantly decreased. See Appendix A-2 Preliminary Grading and Drainage Plan and Appendix A-6 Drainage Calculations.

What about water surface elevation in north drive? Need to be at least one foot above for all floors

The finished floor elevations of the proposed building are set from 1227.00 to 1228.50, following the grades. The finish floor elevations and any equipment is set more than 1.0 foot above the adjacent high top of curb elevation and above the ultimate storm outfall. Grades are matched with the street elevations where the new driveways are proposed. Existing storm drain system will be removed.

Roof drains are connected to the underground storm drain system or will daylight onto the landscape areas. Drainage of the interior courtyards is provided by two independent pipes for redundancy.

Offsite flows reaching the northwest corner of the site will enter through existing drainage openings in the wall and then will be routed via a riprap lined swale through a 3' deep detention basin equipped with a dry well on the bottom. Once the highwater elevation is reached, the basin will overflow through an 8' curb opening and continue easterly along the north property line until it leaves the property at the Scottsdale Road driveway. Estimated depth of the flow will be less than 8" and it is contained between the proposed road curbing and a new 18' high retaining wall along the north property line.

See notes on g/d plan.

NOTED

5. CONCLUSIONS AND RECOMMENDATIONS

The Grading and Drainage plan has been designed in conformance with the recommendations and results presented in this report as well as the City of Scottsdale, Maricopa County, Arizona State and Federal requirements and standards.

Finish floor of the main level of the building is set 1 ft min. above the anticipated 100-year water surface elevation. Grading around the building provides for positive drainage away from the structures. All retaining walls and extended building stem walls shall be properly waterproofed. Regular inspections and maintenance of the wall openings and subsurface drainage systems after every major storm must be performed. Any obstructions of flow will need to be promptly cleared out in order to keep the performance of the storm drain system as designed. Special care shall be taken to avoid of creating ponding conditions against the footprint of existing buildings to remain on the adjacent lots. It is the Owner's responsibility to inspect and properly maintain all on-site drainage structures.

In conclusion, the project site has the potential to collect, convey, and discharge runoff effectively while meeting the County and City guidelines. The proposed improvements do not impact drainage

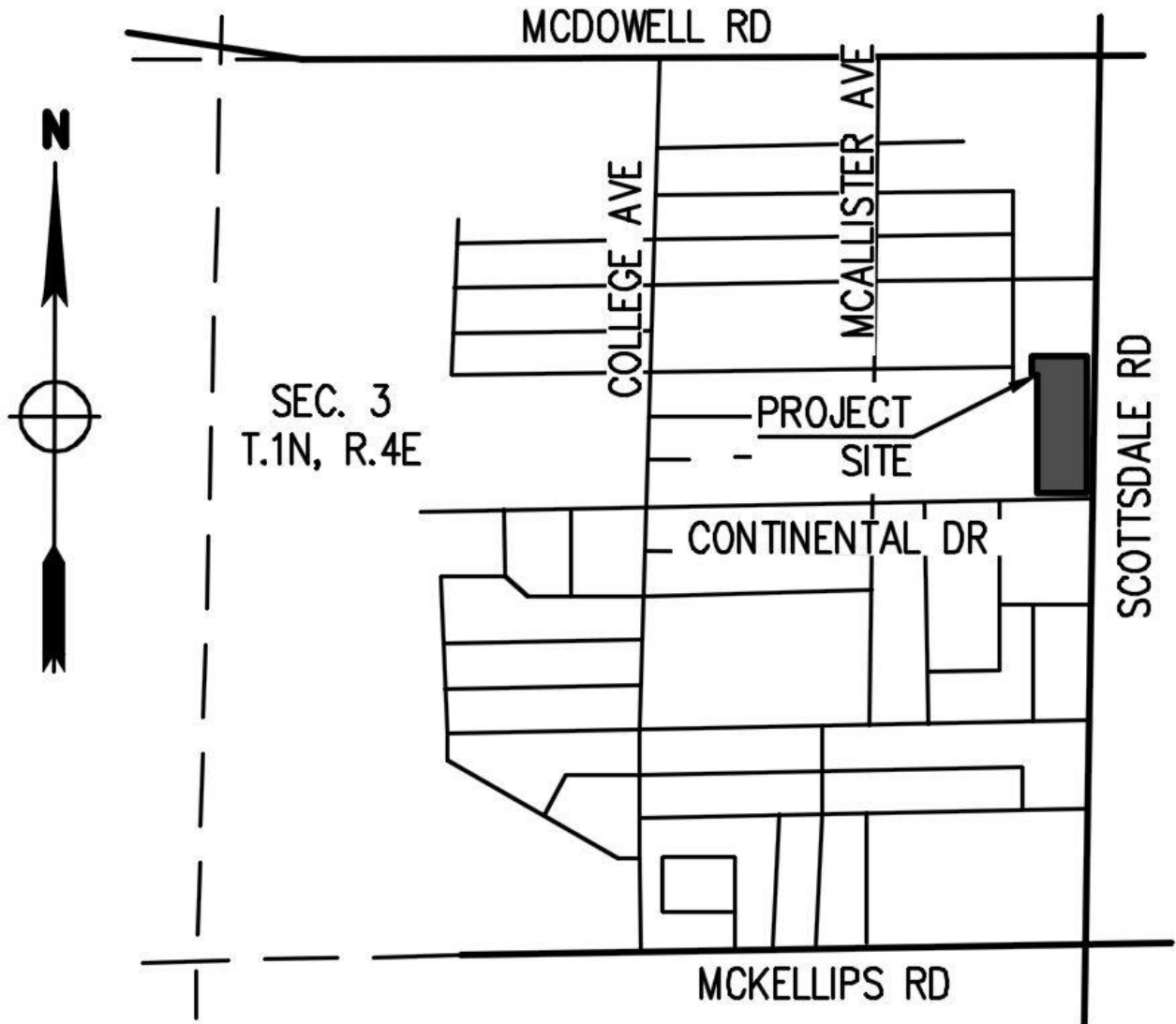
conditions of neighboring lots and will not result in significant changes to the existing drainage patterns or magnitudes.

6. REFERENCES

- Drainage Design Manual for Maricopa County, Arizona – Volume I Hydrology, Flood Control District of Maricopa County
- Drainage Design Manual for Maricopa County, Arizona – Volume II Hydraulics, Flood Control District of Maricopa County
- Drainage Policies and Standards Manual for Maricopa County, Arizona, Flood Control District of Maricopa County
- City of Scottsdale Design Standards & Policies Manual
- City of Scottsdale Stormwater Management System
- Lower Indian Bend Wash Area Drainage Master Study
- Scottsdale Road Streetscape Improvements - Roosevelt St. to Earll Dr.

APPENDIX A-1

Vicinity Map



APPENDIX A-2

Preliminary Grading and Drainage Plan

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Underground storage desing and operation shall be per underground policy in DSPM. Provide a statement to this effect in DR drainage report. Please review this policy and what it requires.

POLICY REVIEWED AND ADDED VERBAGE IN THE REPORT. NEW DE SHOWN. MORE NOTES TO BE ADDED FOR THE CD PHASE.

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- SEWER MANHOLE
- STORM DRAIN INLET
- TRANSFORMER
- TELE COMMUNICATIONS PEDESTAL
- CATV, PHONE
- GAS LINE
- CATV, PHONE
- SEWER LINE
- WATER LINE
- ELECTRIC LINE
- EXISTING CONTOUR

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN IS SITUATED (IN) SCOTTSDALE, IN THE COUNTY OF MARICOPA, STATE OF ARIZONA, AND IS DESCRIBED AS FOLLOWS:

LOT 1, A PROPERTY ASSEMBLAGE IN THE CITY OF SCOTTSDALE, ACCORDING TO BOOK 815 OF MAPS, PAGE 7, RECORDS OF MARICOPA COUNTY, ARIZONA LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 3, TOWNSHIP 1 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA.

APN: 129-13-002G, 129-13-002K, 129-13-003D, 129-13-002J, 129-13-004D, 129-13-004E

As part of the drainage report for the development review case, the hydraulics of these drainage openings should be evaluated based on the flow determined from the off-site hydrologic analysis. In the event these existing drainage openings are resulting in upstream flooding or a significant backwater, the city will require the openings be enlarged as part of the project.

OPENINGS ARE ADEQUATE AS IS. PLEASE NOTE THAT A NEW OPENING WILL BE PROVIDED FOR THE SIDEWALK. ALSO THE FENCE MAY BE CONVERTED TO IRON FENCE.

BASIS OF BEARINGS

THE MONUMENT LINE OF SCOTTSDALE ROAD THE BEARING OF WHICH IS N00°00'00"W, AS SHOWN ON THE PLAT OF MARK MITSUBISHI, RECORDED IN BOOK 815, PAGE 7, MCR.

BENCHMARK

BRASS CAP IN HAND HOLE AT THE INTERSECTION OF SCOTTSDALE RD AND MCDOWELL ROAD HAVING AN ELEVATION OF 1230.69, CITY OF SCOTTSDALE DATUM, NAVD 88 DATUM, BM# 5032

FLOOD INSURANCE RATE MAP (FIRM) DATA

COMMUNITY #	PANEL #	SUFFIX	BASE FLOOD ELEVATION
045012	2235 OF 4425	L	N/A
MAP #	PANEL DATE	ZONE	X*
04013C	10/16/2015	X*	

*AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

SITE DATA

APN: 129-13-002G, 129-13-003E, 129-13-003D, 129-13-004D
ADDRESS: 1000 N SCOTTSDALE RD., SCOTTSDALE, AZ 85257
LOT AREA: 192,943 S.F. (4.429 AC.)
Q.S.: 12-44

NOTED

The prior designs on this project showed the off-site flow to the north apparently based on the ADMS results and our review comments. In reviewing this report and the original site improvement plan we concur that the original design intent for this off site flow was directly to the east to Scottsdale Road.

CROSS SECTION 1-1

The revised design is proposing to convey the off site flow through this access road which appears to be conceptually acceptable. The drainage report or the development review application will need to provide more details and analysis on this design including limits and labeling of floodplain on plan views, depths of flooding, finish floor elevations relative to 1% WSEL's. The owner and residents (presuming apartments) of units along this drive will need to be made aware of this situation which will impact the use of the units.

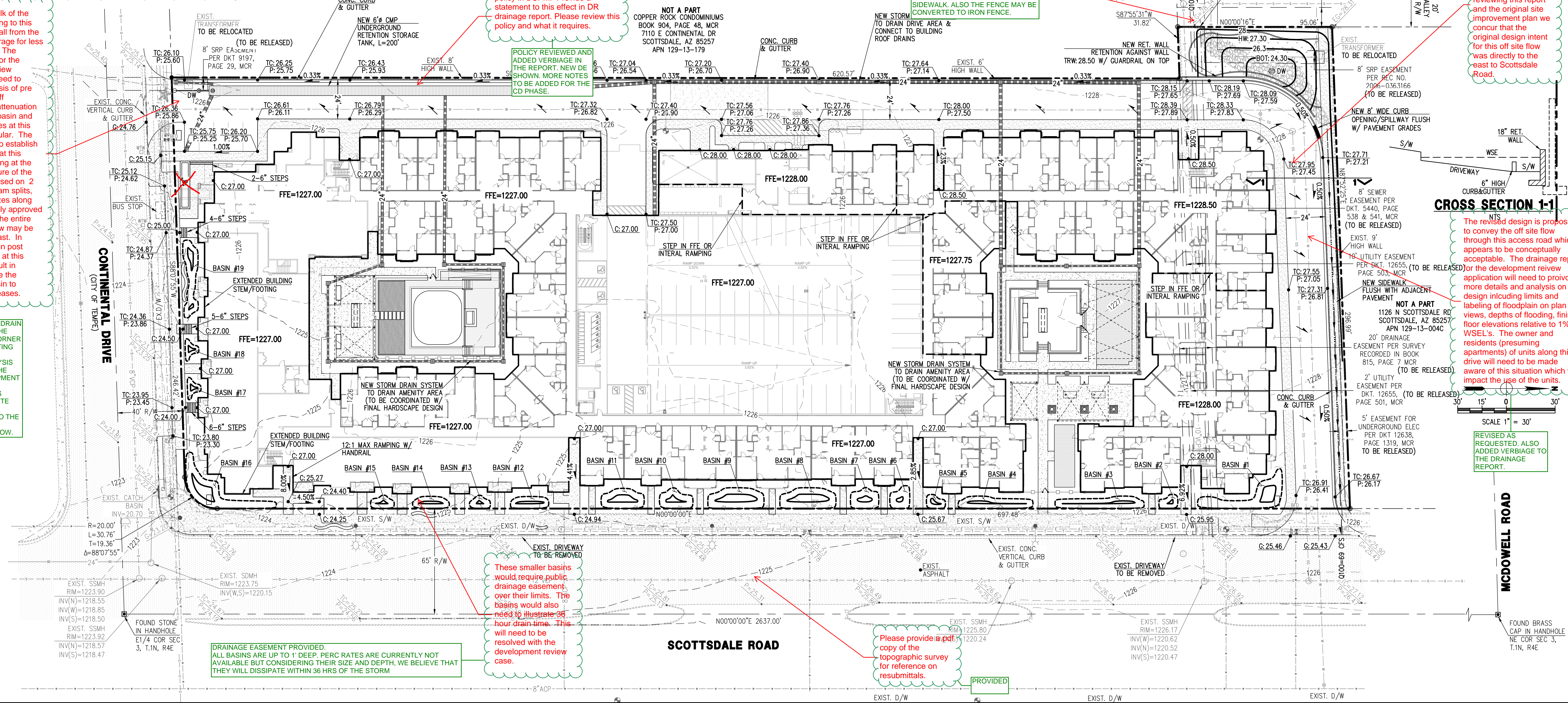
REVISED AS REQUESTED. ALSO ADDED VERBAGE TO THE DRAINAGE REPORT.

Looks like the bulk of the site will be draining to this location and outfall from the underground storage for less frequent events. The drainage report for the development review application will need to provide an analysis of pre versus post runoff considering the attenuation provided by the basin and show no increases at this location in particular. The report will need to establish the existing flow at this location. In looking at the approximate nature of the ADMS results based on 2 foot topo, upstream splits, and large grid sizes along with the previously approved plan, it appears the entire off-site 69 cfs flow may be heading to the east. In short, increases in post developed runoff at this location may result in needing to upsize the underground basin to mitigate the increases.

ADDED STORM DRAIN PIPING NEAR THE SOUTHEAST CORNER TO MIMIC EXISTING CONDITIONS. PER THE ANALYSIS PERFORMED THE POST DEVELOPMENT CONDITIONS PRODUCE LESS RUNOFF. OFFSITE FLOWS ARE REDIRECTED TO THE EAST AS THEY CURRENTLY FLOW.

These smaller basins would require public drainage easement over their limits. The basins would also need to illustrate 36 hour drain time. This will need to be resolved with the development review case.

Please provide a pdf copy of the topographic survey for reference on resubmittals.



DRAINAGE EASEMENT PROVIDED
ALL BASINS ARE UP TO 1' DEEP. PERC RATES ARE CURRENTLY NOT AVAILABLE BUT CONSIDERING THEIR SIZE AND DEPTH, WE BELIEVE THAT THEY WILL DISSIPATE WITHIN 36 HRS OF THE STORM

DATE: 06/15/20
JOB: 2004085
VERSION: 1.1
PLOT DATE: 06/15/20

SCALE: 1"=30'
DESIGNED BY: NP
DRAWN BY: DW
CHECKED BY: JL

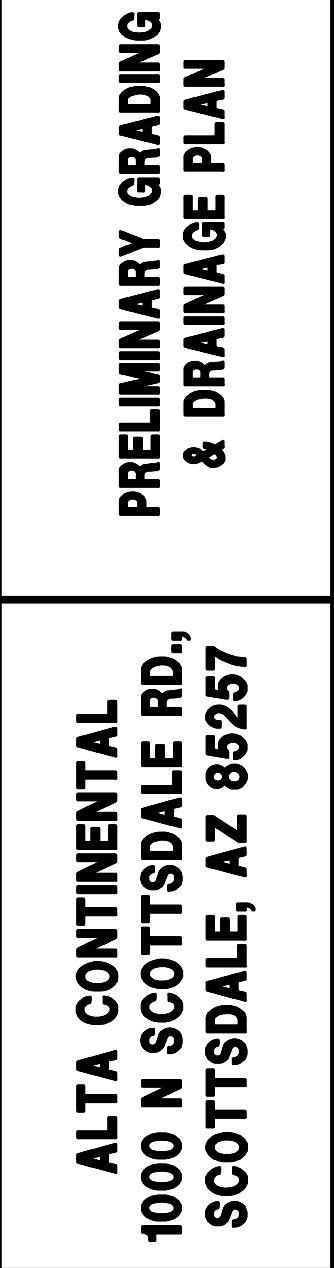
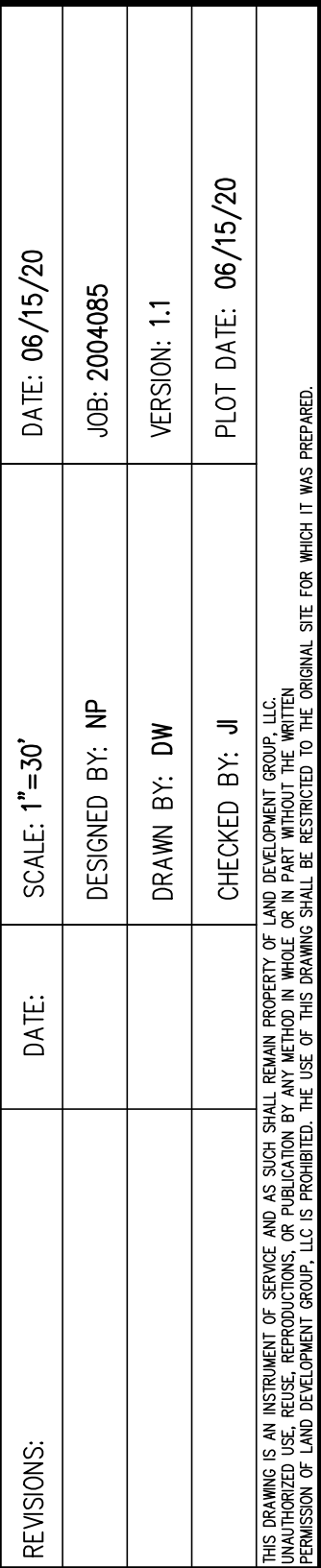
DATE:
REVISIONS:

PRELIMINARY GRADING & DRAINAGE PLAN

ALTA CONTINENTAL
1000 N SCOTTSDALE RD.,
SCOTTSDALE, AZ 85257

P 602 889 1984 | F 602 445 9482
8808 N CENTRAL AVE, SUITE 288
PHOENIX, AZ 85020
PHOENIX @ LOGENCO.COM

PGD-1
1 OF 2



APPENDIX A-3

Aerial and Topography Map Exhibits



DRAINAGE
OPENINGS

EXISTING DRYWELL

PROJECT SITE

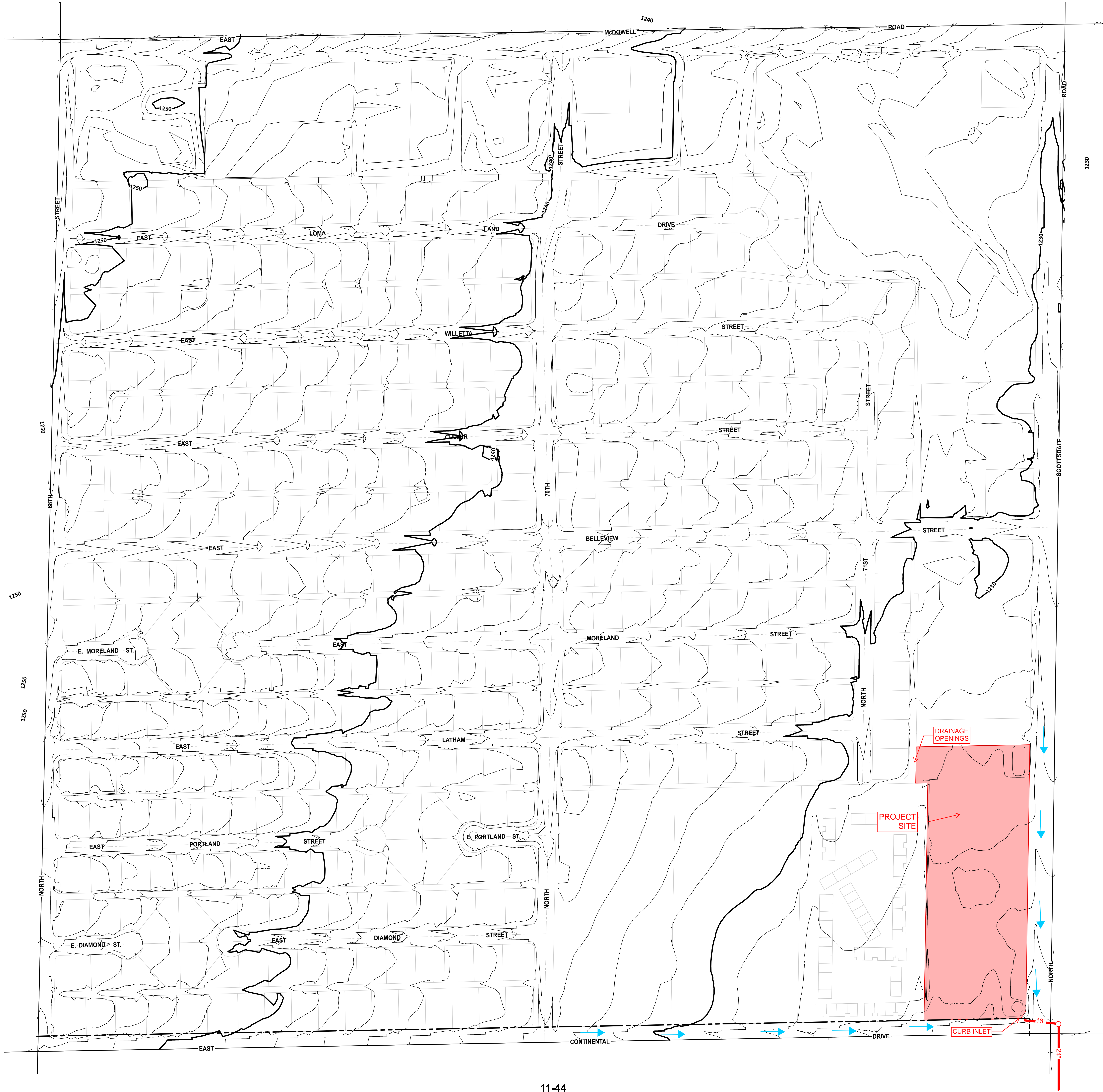
CURB INLET

SCOTTSDALE ROAD

CONTINENTAL DRIVE

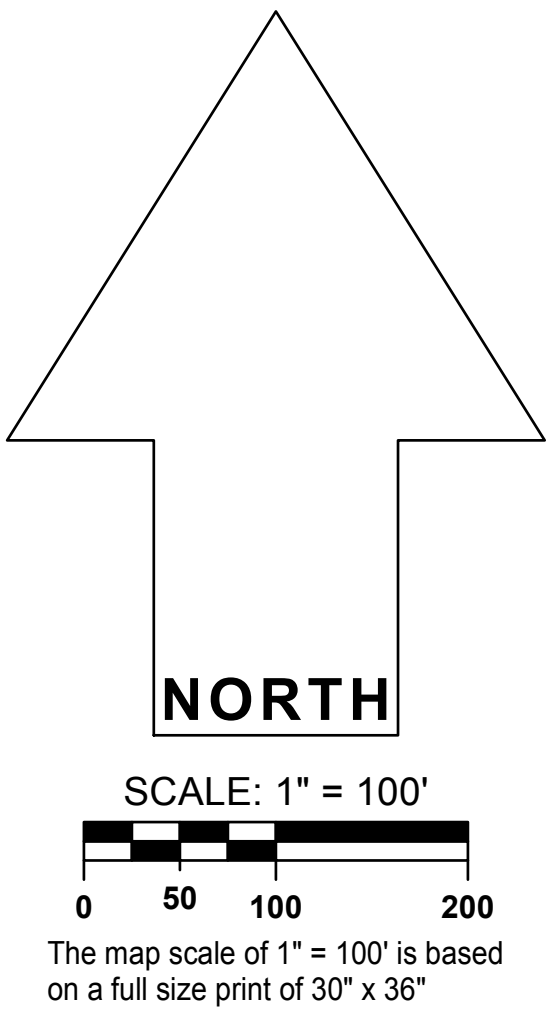
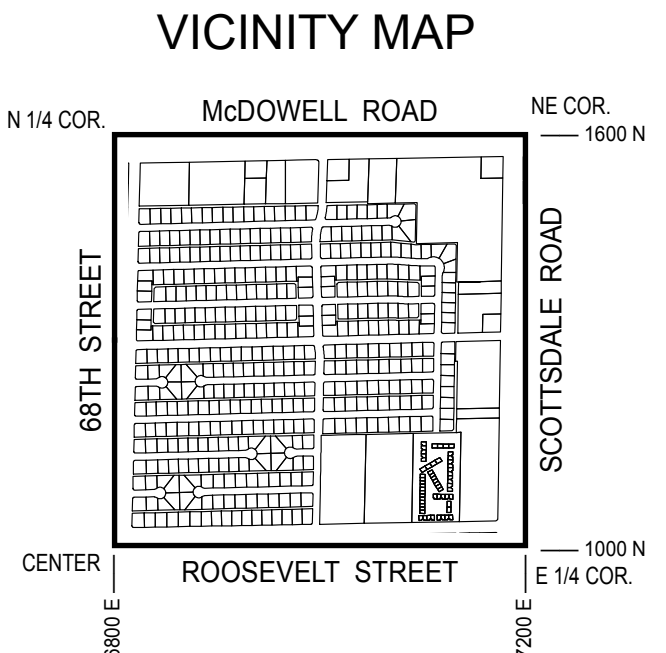
18"

24"



GENERAL NOTES:
• THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
• THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS 'CALCULATED' ON THE MAP.

LEGEND:



CONTOUR
QUARTER SECTION MAP

12-44

NE 1/4 SEC. 3 T1N R4E

APPENDIX A-4

FEMA FIRM Exhibit

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA

AND INCORPORATED AREAS

PANEL 2235 OF 4425

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
MARICOPA COUNTY	040037	2235	L
MESA, CITY OF	040048	2235	L
SCOTTSDALE, CITY OF	045012	2235	L
TEMPE, CITY OF	040054	2235	L

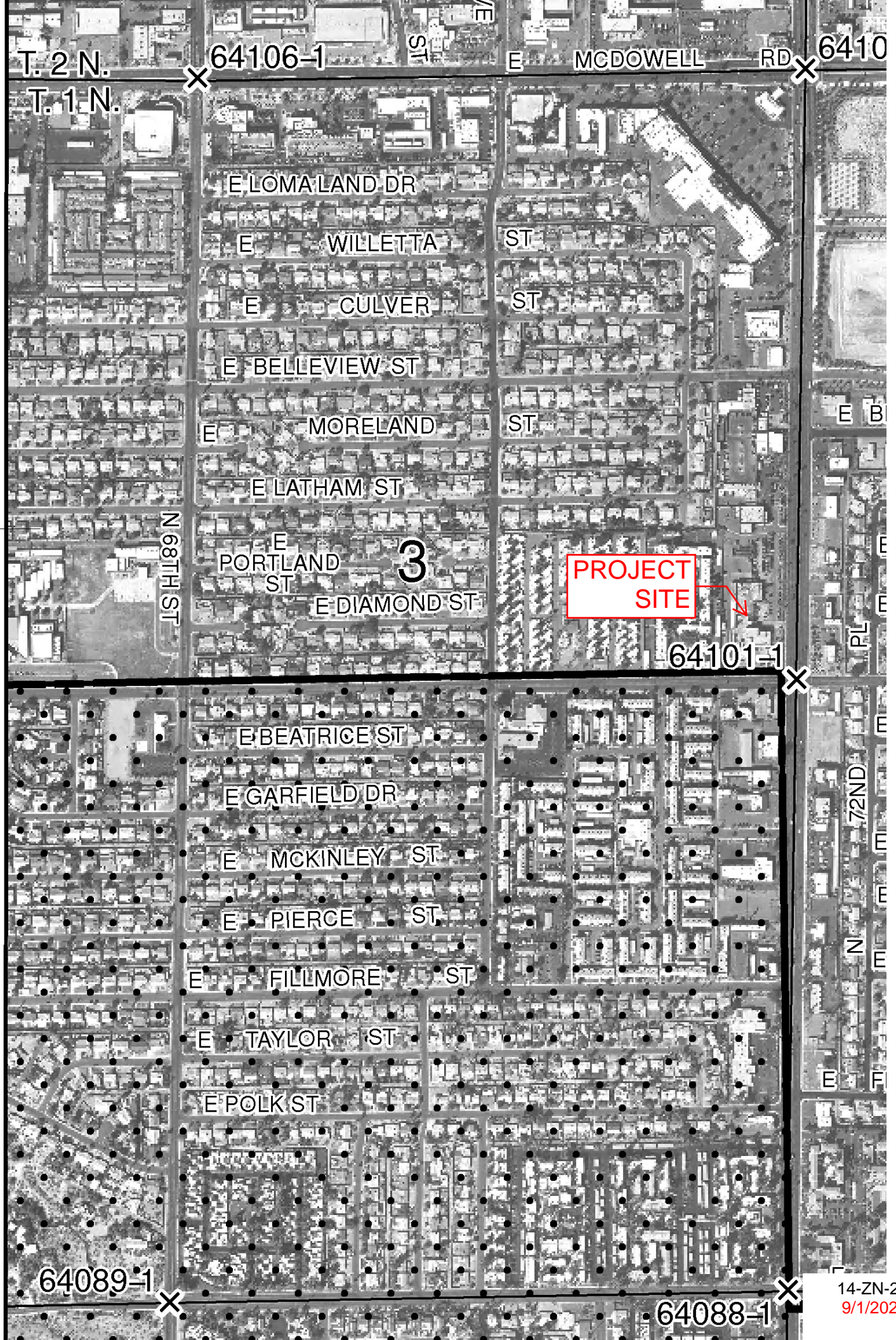
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
04013C2235L

MAP REVISED
OCTOBER 16, 2013

Federal Emergency Management Agency



APPENDIX A-5

FCDMC Flood Plain Viewer

Floodplain and Elevation Certificate Map



Elevation Certificate

Parcel

Floodplain (Pending FEMA Approval)

Floodway

100-Year Flood Zone

Floodplain (FEMA Effective)

Floodway

100-Year Flood Zone



Flood Control District of Maricopa County

2801 W Durango St
Phoenix, AZ 85009
(602) 506-2419
<http://www.fcd.maricopa.gov>

Unofficial Document

This document cannot be used for floodplain determinations. Current studies, erosion setbacks and other factors may also affect the floodplain status of the property. The information shown for pending floodplains are the best technical information available at this time to determine the 1% chance flood and are subject to change.



1:2,257

0 0.0175 0.035

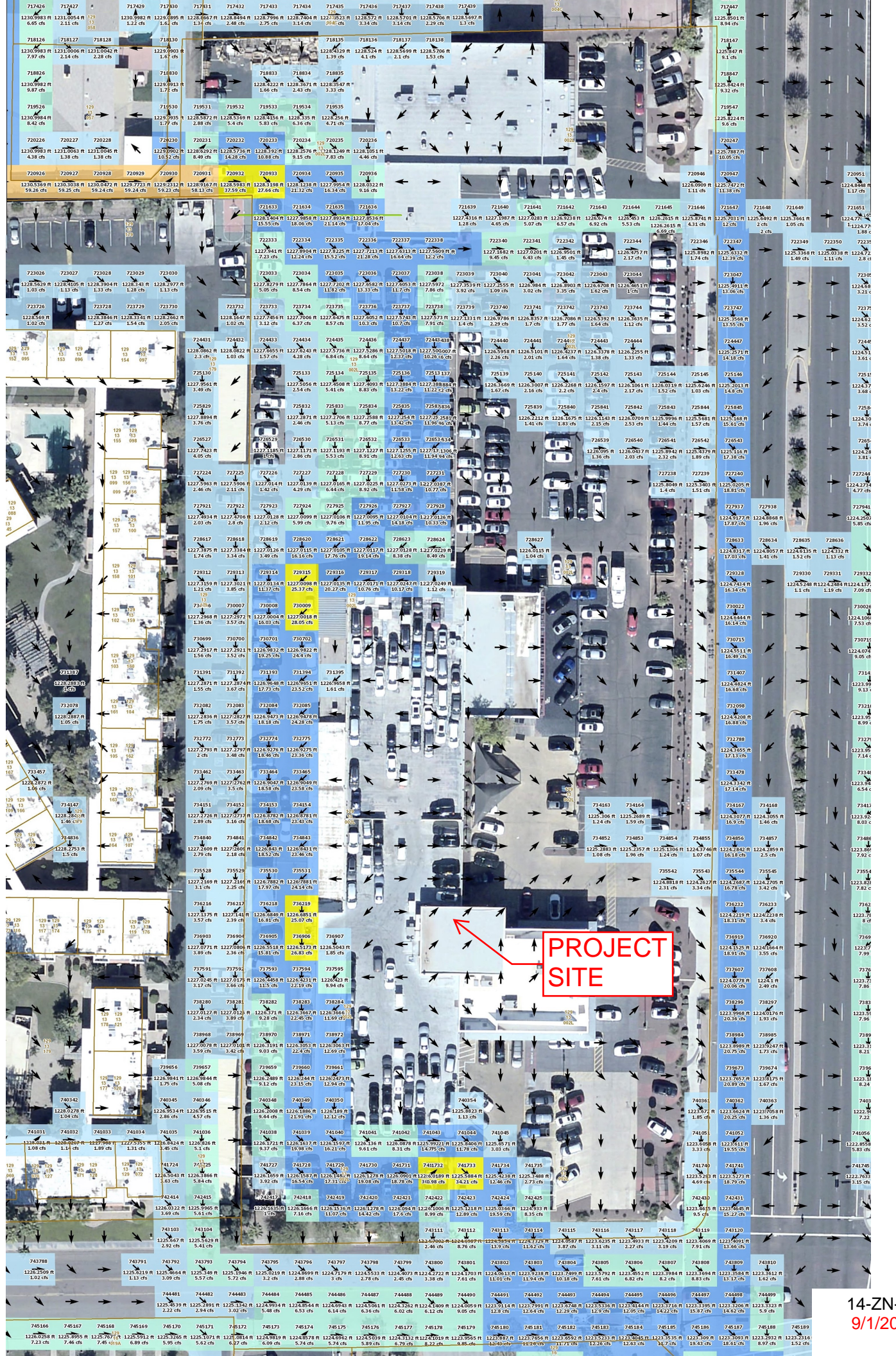
1 inch = 188 feet

14-ZN-2018

9/1/2020

APPENDIX A-6

LIBW ADMS FLO-2D Study



APPENDIX A-7

Drainage Calculations

RETENTION CALCULATIONS

NOTES

- (1). RETENTION CALCULATIONS ARE FOR (PRE VS. POST OR FIRST FLUSH, WHICHEVER IS GREATER).
- (2). CALCULATION IS BASED ON THE FIRST 1/2" OF RAINFALL.
- (3). RAINFALL DEPTH IS PER NOAA ATLAS 14, VOLUME 1, VERSION 5.
- (4). BASED ON CURRENT CONDITIONS. NO ONSITE RETENTION CURRENTLY PROVIDED

PRE-DEVELOPMENT VS. POST DEVELOPMENT FOR THE 100-YR, 2 HOUR STORM EVENT (1)							FIRST FLUSH	
WEIGHTED RUNOFF COEFFICIENT, C_w						VOLUME REQUIRED, CF $V = P \times A \times C / 12$ (1) RAINFALL DEPTH, $P = 2.14"$ (3) AREA = 192,943 SF	VOLUME REQUIRED, CF $V = P \times A / 12$ RAINFALL DEPTH, $P = 0.5"$ (2) AREA = 192,943 SF (5)	
CONDITION	SURFACE	C	AREA SF	$C \times A$	C_w	C (PRE VS POST)	VR PRE VS POST	VR FIRST FLUSH
PRE- DEV. (4)	PERVIOUS	0.45	11,558	5,201	0.92	-0.043	-1487	8,039 (GOVERNS)
	IMPERVIOUS	0.95	181,385	172,316				
POST- DEV.	PERVIOUS	0.45	28,233	12,705	0.88			
	IMPERVIOUS	0.95	164,710	156,475				

RETENTION BASIN TABLE						
RETENTION BASIN ID	CONTOUR ELEVATION		CONTOUR AREA	DEPTH	VOLUME PROVIDED	AS-BUILT
			S.F.		C.F.	
1	HW	27.00	481	1.00	279	
	BOTTOM	26.00	77			
2	HW	27.00	80	1.00	43	
	BOTTOM	26.00	5			
3	HW	26.50	340	1.00	183	
	BOTTOM	25.50	25			
4	HW	26.00	288	1.00	156	
	BOTTOM	25.00	24			
5	HW	26.00	80	1.00	46	
	BOTTOM	25.00	11			
6	HW	26.00	141	1.00	75	
	BOTTOM	25.00	9			
7	HW	26.00	187	1.00	106	
	BOTTOM	25.00	24			
8	HW	26.00	389	1.00	243	
	BOTTOM	25.00	96			
9	HW	26.00	389	1.00	243	
	BOTTOM	25.00	96			
10	HW	26.00	199	1.00	112	
	BOTTOM	25.00	24			

RETENTION BASIN TABLE						
11	HW	25.50	275	1.00	168	
	BOTTOM	24.50	60			
12	HW	25.50	156	1.00	89	
	BOTTOM	24.50	22			
13	HW	25.50	78	1.00	42	
	BOTTOM	24.50	5			
14	HW	25.50	143	1.00	81	
	BOTTOM	24.50	19			
15	HW	25.00	91	1.00	49	
	BOTTOM	24.00	7			
16	HW	25.00	546	1.00	318	
	BOTTOM	24.00	90			
17	HW	25.00	66	1.00	38	
	BOTTOM	24.00	9			
18	HW	25.00	66	1.00	38	
	BOTTOM	24.00	9			
19	HW	25.00	295	1.00	164	
	BOTTOM	24.00	33			
20	6' DIA. RETENTION PIPE (200 LF)				5,655	
TOTAL					8,122	



NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.4779°, Longitude: -111.9267°
Elevation: 0 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.182 (0.153-0.221)	0.238 (0.201-0.289)	0.323 (0.271-0.391)	0.389 (0.324-0.468)	0.478 (0.392-0.573)	0.547 (0.442-0.653)	0.617 (0.489-0.734)	0.688 (0.537-0.819)	0.784 (0.596-0.934)	0.858 (0.639-1.02)
10-min	0.276 (0.232-0.336)	0.362 (0.305-0.439)	0.492 (0.412-0.595)	0.592 (0.493-0.713)	0.727 (0.596-0.872)	0.832 (0.673-0.993)	0.939 (0.745-1.12)	1.05 (0.818-1.25)	1.19 (0.908-1.42)	1.31 (0.973-1.56)
15-min	0.343 (0.288-0.417)	0.448 (0.378-0.544)	0.610 (0.511-0.738)	0.734 (0.612-0.884)	0.901 (0.739-1.08)	1.03 (0.835-1.23)	1.16 (0.924-1.38)	1.30 (1.01-1.54)	1.48 (1.13-1.76)	1.62 (1.21-1.93)
30-min	0.461 (0.388-0.561)	0.603 (0.509-0.733)	0.821 (0.688-0.994)	0.988 (0.824-1.19)	1.21 (0.995-1.46)	1.39 (1.12-1.66)	1.57 (1.24-1.86)	1.75 (1.37-2.08)	1.99 (1.52-2.37)	2.18 (1.63-2.60)
60-min	0.571 (0.480-0.694)	0.746 (0.630-0.907)	1.02 (0.852-1.23)	1.22 (1.02-1.47)	1.50 (1.23-1.80)	1.72 (1.39-2.05)	1.94 (1.54-2.31)	2.17 (1.69-2.57)	2.47 (1.88-2.94)	2.70 (2.01-3.22)
2-hr	0.662 (0.565-0.788)	0.857 (0.733-1.02)	1.15 (0.978-1.36)	1.37 (1.15-1.62)	1.68 (1.39-1.97)	1.91 (1.57-2.24)	2.15 (1.74-2.52)	2.39 (1.90-2.81)	2.72 (2.11-3.20)	2.98 (2.25-3.52)
3-hr	0.718 (0.610-0.861)	0.921 (0.787-1.11)	1.21 (1.03-1.45)	1.44 (1.21-1.72)	1.76 (1.46-2.09)	2.02 (1.65-2.39)	2.29 (1.84-2.71)	2.57 (2.03-3.03)	2.96 (2.27-3.49)	3.27 (2.44-3.88)
6-hr	0.865 (0.751-1.01)	1.10 (0.955-1.29)	1.41 (1.22-1.65)	1.65 (1.42-1.93)	1.99 (1.69-2.31)	2.26 (1.89-2.61)	2.53 (2.08-2.93)	2.82 (2.27-3.26)	3.20 (2.52-3.71)	3.51 (2.69-4.08)
12-hr	0.968 (0.848-1.12)	1.22 (1.07-1.42)	1.55 (1.36-1.80)	1.81 (1.57-2.09)	2.16 (1.85-2.48)	2.43 (2.06-2.78)	2.70 (2.26-3.10)	2.98 (2.45-3.42)	3.35 (2.69-3.87)	3.65 (2.88-4.24)
24-hr	1.16 (1.04-1.30)	1.47 (1.32-1.66)	1.91 (1.71-2.14)	2.25 (2.01-2.52)	2.73 (2.42-3.06)	3.11 (2.73-3.47)	3.50 (3.06-3.91)	3.91 (3.39-4.36)	4.47 (3.83-4.99)	4.92 (4.17-5.50)
2-day	1.25 (1.12-1.41)	1.60 (1.44-1.80)	2.11 (1.88-2.36)	2.51 (2.23-2.80)	3.06 (2.71-3.42)	3.51 (3.09-3.92)	3.98 (3.48-4.45)	4.47 (3.87-5.00)	5.15 (4.41-5.78)	5.70 (4.83-6.42)
3-day	1.32 (1.19-1.49)	1.70 (1.52-1.90)	2.23 (1.99-2.50)	2.66 (2.37-2.98)	3.27 (2.89-3.65)	3.75 (3.30-4.19)	4.27 (3.73-4.77)	4.81 (4.17-5.38)	5.57 (4.77-6.24)	6.19 (5.24-6.95)
4-day	1.40 (1.25-1.57)	1.79 (1.60-2.01)	2.36 (2.10-2.64)	2.82 (2.51-3.15)	3.47 (3.07-3.87)	3.99 (3.51-4.46)	4.56 (3.98-5.09)	5.16 (4.46-5.76)	6.00 (5.12-6.70)	6.68 (5.65-7.49)
7-day	1.55 (1.38-1.74)	1.97 (1.77-2.22)	2.61 (2.33-2.92)	3.12 (2.77-3.49)	3.84 (3.40-4.30)	4.42 (3.89-4.94)	5.04 (4.40-5.63)	5.70 (4.93-6.37)	6.63 (5.66-7.42)	7.37 (6.24-8.27)
10-day	1.68 (1.50-1.88)	2.15 (1.93-2.41)	2.84 (2.53-3.17)	3.39 (3.02-3.78)	4.16 (3.68-4.64)	4.78 (4.21-5.33)	5.44 (4.75-6.06)	6.13 (5.32-6.84)	7.10 (6.08-7.93)	7.88 (6.68-8.81)
20-day	2.07 (1.85-2.30)	2.66 (2.38-2.96)	3.50 (3.14-3.90)	4.15 (3.71-4.61)	5.01 (4.46-5.57)	5.68 (5.03-6.31)	6.35 (5.61-7.07)	7.04 (6.18-7.84)	7.96 (6.93-8.89)	8.67 (7.49-9.70)
30-day	2.41 (2.16-2.69)	3.10 (2.78-3.46)	4.09 (3.66-4.54)	4.84 (4.32-5.37)	5.84 (5.19-6.48)	6.61 (5.85-7.32)	7.40 (6.52-8.20)	8.21 (7.19-9.10)	9.29 (8.08-10.3)	10.1 (8.73-11.3)
45-day	2.80 (2.52-3.11)	3.60 (3.24-4.01)	4.74 (4.26-5.27)	5.59 (5.01-6.21)	6.70 (5.99-7.44)	7.54 (6.71-8.38)	8.39 (7.43-9.32)	9.23 (8.14-10.3)	10.3 (9.06-11.5)	11.2 (9.74-12.5)
60-day	3.10 (2.79-3.44)	4.00 (3.60-4.44)	5.26 (4.73-5.83)	6.18 (5.54-6.84)	7.37 (6.60-8.16)	8.25 (7.36-9.15)	9.14 (8.12-10.1)	10.00 (8.85-11.1)	11.1 (9.80-12.4)	12.0 (10.5-13.4)

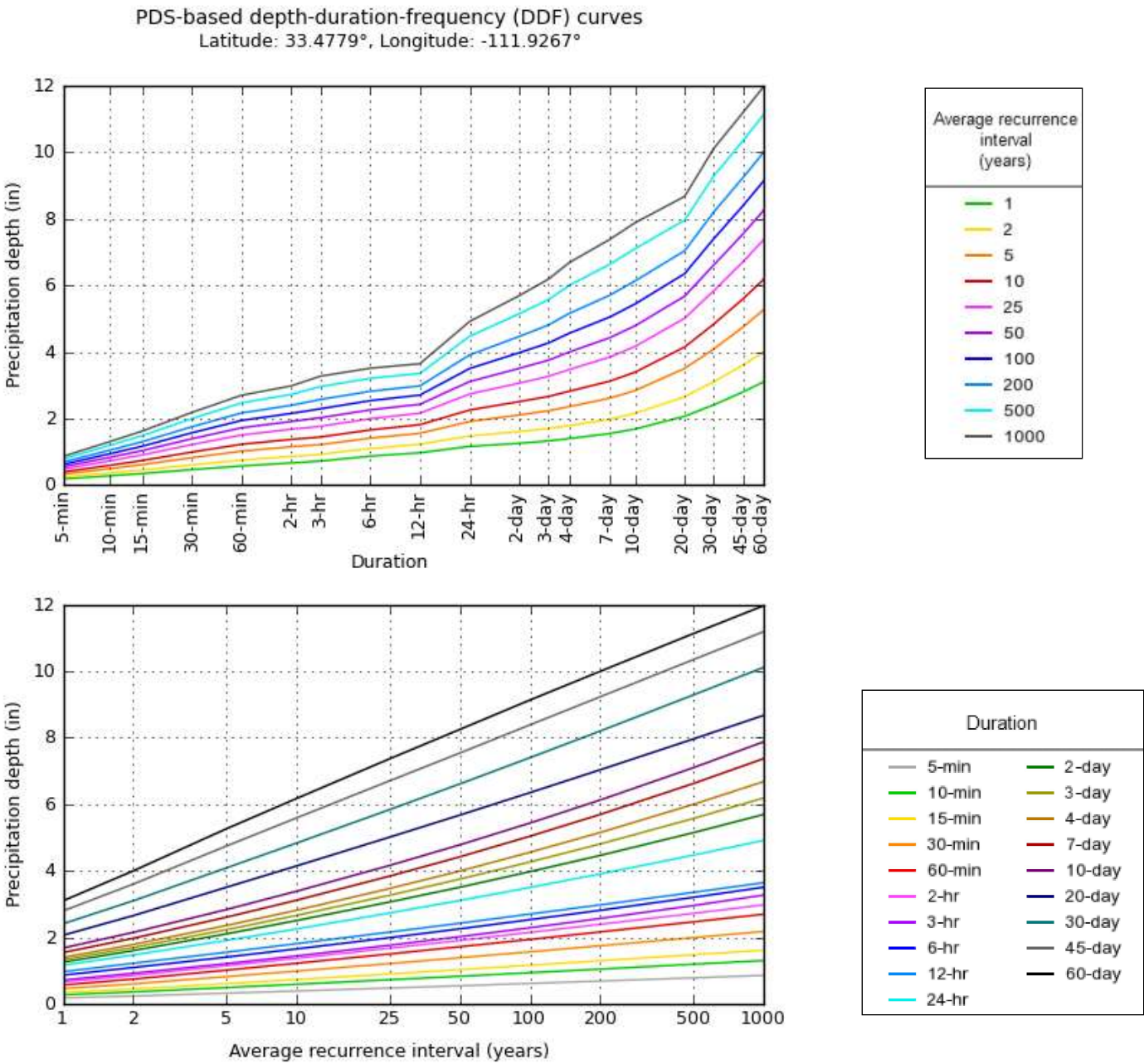
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Tue Jun 16 11:51:34 2020

[Back to Top](#)

Maps & aerials

Small scale terrain



NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.4779°, Longitude: -111.9267°
Elevation: 1239.94 ft**

* source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.18 (1.84-2.65)	2.86 (2.41-3.47)	3.88 (3.25-4.69)	4.67 (3.89-5.62)	5.74 (4.70-6.88)	6.56 (5.30-7.84)	7.40 (5.87-8.81)	8.26 (6.44-9.83)	9.41 (7.15-11.2)	10.3 (7.67-12.3)
10-min	1.66 (1.39-2.02)	2.17 (1.83-2.63)	2.95 (2.47-3.57)	3.55 (2.96-4.28)	4.36 (3.58-5.23)	4.99 (4.04-5.96)	5.63 (4.47-6.70)	6.28 (4.91-7.48)	7.16 (5.45-8.53)	7.83 (5.84-9.35)
15-min	1.37 (1.15-1.67)	1.79 (1.51-2.18)	2.44 (2.04-2.95)	2.94 (2.45-3.54)	3.60 (2.96-4.32)	4.13 (3.34-4.92)	4.65 (3.70-5.54)	5.20 (4.06-6.18)	5.92 (4.50-7.05)	6.47 (4.82-7.72)
30-min	0.922 (0.776-1.12)	1.21 (1.02-1.47)	1.64 (1.38-1.99)	1.98 (1.65-2.38)	2.43 (1.99-2.91)	2.78 (2.25-3.32)	3.13 (2.49-3.73)	3.50 (2.73-4.16)	3.99 (3.03-4.75)	4.36 (3.25-5.20)
60-min	0.571 (0.480-0.694)	0.746 (0.630-0.907)	1.02 (0.852-1.23)	1.22 (1.02-1.47)	1.50 (1.23-1.80)	1.72 (1.39-2.05)	1.94 (1.54-2.31)	2.17 (1.69-2.57)	2.47 (1.88-2.94)	2.70 (2.01-3.22)
2-hr	0.331 (0.282-0.394)	0.428 (0.366-0.512)	0.574 (0.489-0.682)	0.686 (0.577-0.812)	0.838 (0.696-0.986)	0.954 (0.783-1.12)	1.08 (0.868-1.26)	1.20 (0.950-1.40)	1.36 (1.05-1.60)	1.49 (1.13-1.76)
3-hr	0.239 (0.203-0.287)	0.307 (0.262-0.369)	0.404 (0.343-0.484)	0.480 (0.404-0.572)	0.587 (0.488-0.696)	0.673 (0.550-0.796)	0.763 (0.613-0.901)	0.856 (0.676-1.01)	0.985 (0.754-1.16)	1.09 (0.814-1.29)
6-hr	0.144 (0.125-0.170)	0.183 (0.159-0.215)	0.235 (0.204-0.275)	0.276 (0.238-0.322)	0.332 (0.282-0.385)	0.377 (0.315-0.435)	0.423 (0.348-0.488)	0.470 (0.379-0.544)	0.535 (0.421-0.620)	0.586 (0.450-0.681)
12-hr	0.080 (0.070-0.093)	0.102 (0.089-0.118)	0.129 (0.113-0.149)	0.150 (0.130-0.173)	0.179 (0.154-0.206)	0.201 (0.171-0.231)	0.224 (0.187-0.257)	0.247 (0.204-0.284)	0.278 (0.224-0.322)	0.303 (0.239-0.352)
24-hr	0.048 (0.043-0.054)	0.061 (0.055-0.069)	0.080 (0.071-0.089)	0.094 (0.084-0.105)	0.114 (0.101-0.127)	0.130 (0.114-0.144)	0.146 (0.127-0.163)	0.163 (0.141-0.182)	0.186 (0.159-0.208)	0.205 (0.174-0.229)
2-day	0.026 (0.023-0.029)	0.033 (0.030-0.038)	0.044 (0.039-0.049)	0.052 (0.046-0.058)	0.064 (0.056-0.071)	0.073 (0.064-0.082)	0.083 (0.072-0.093)	0.093 (0.081-0.104)	0.107 (0.092-0.120)	0.119 (0.101-0.134)
3-day	0.018 (0.016-0.021)	0.024 (0.021-0.026)	0.031 (0.028-0.035)	0.037 (0.033-0.041)	0.045 (0.040-0.051)	0.052 (0.046-0.058)	0.059 (0.052-0.066)	0.067 (0.058-0.075)	0.077 (0.066-0.087)	0.086 (0.073-0.097)
4-day	0.015 (0.013-0.016)	0.019 (0.017-0.021)	0.025 (0.022-0.027)	0.029 (0.026-0.033)	0.036 (0.032-0.040)	0.042 (0.037-0.046)	0.047 (0.041-0.053)	0.054 (0.046-0.060)	0.062 (0.053-0.070)	0.070 (0.059-0.078)
7-day	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.016 (0.014-0.017)	0.019 (0.017-0.021)	0.023 (0.020-0.026)	0.026 (0.023-0.029)	0.030 (0.026-0.034)	0.034 (0.029-0.038)	0.039 (0.034-0.044)	0.044 (0.037-0.049)
10-day	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.014 (0.013-0.016)	0.017 (0.015-0.019)	0.020 (0.018-0.022)	0.023 (0.020-0.025)	0.026 (0.022-0.029)	0.030 (0.025-0.033)	0.033 (0.028-0.037)
20-day	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.007-0.008)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.013)	0.013 (0.012-0.015)	0.015 (0.013-0.016)	0.017 (0.014-0.019)	0.018 (0.016-0.020)
30-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.006-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.013 (0.011-0.014)	0.014 (0.012-0.016)
45-day	0.003 (0.002-0.003)	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.008-0.011)	0.010 (0.009-0.012)
60-day	0.002 (0.002-0.002)	0.003 (0.003-0.003)	0.004 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.009)

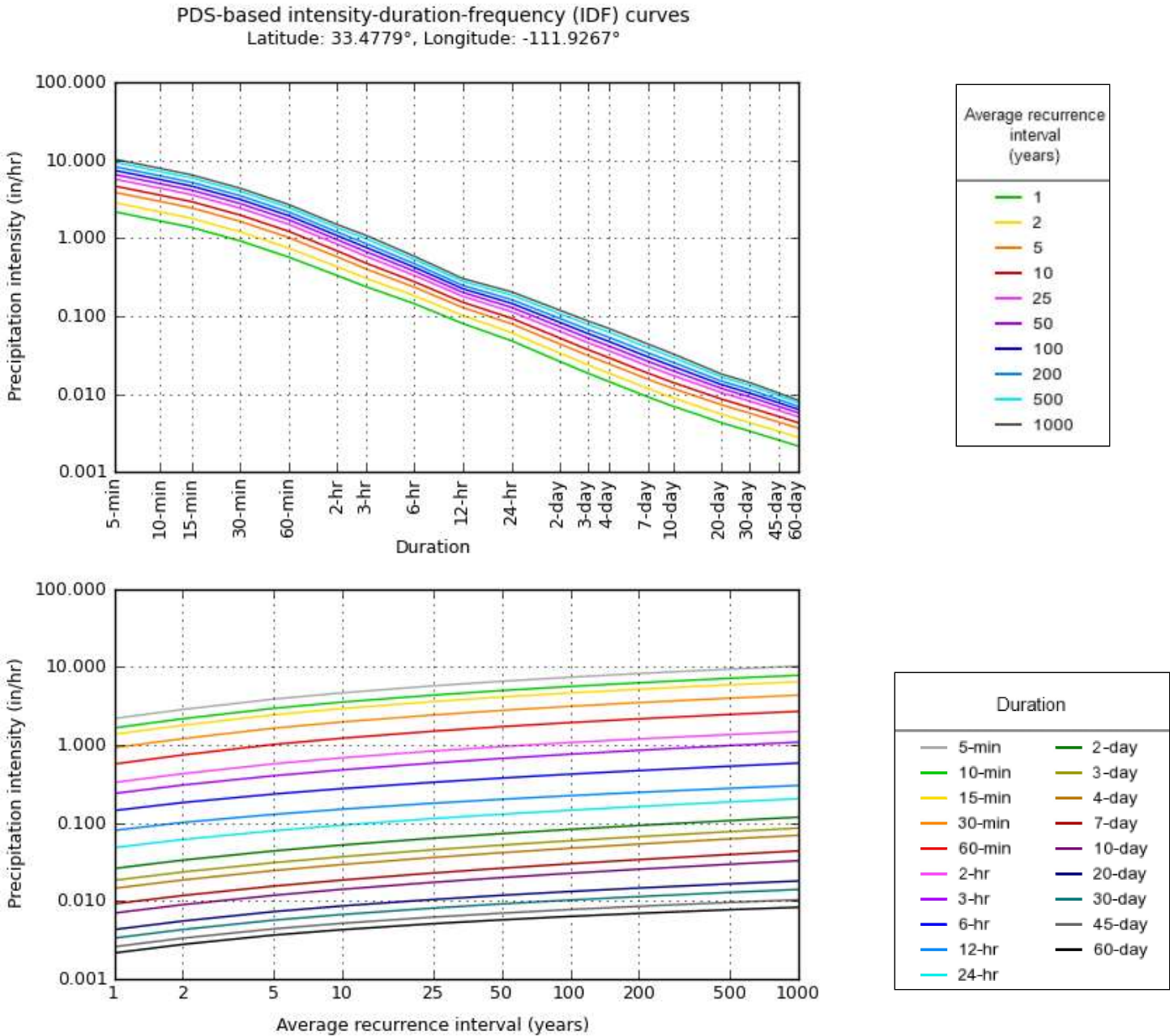
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



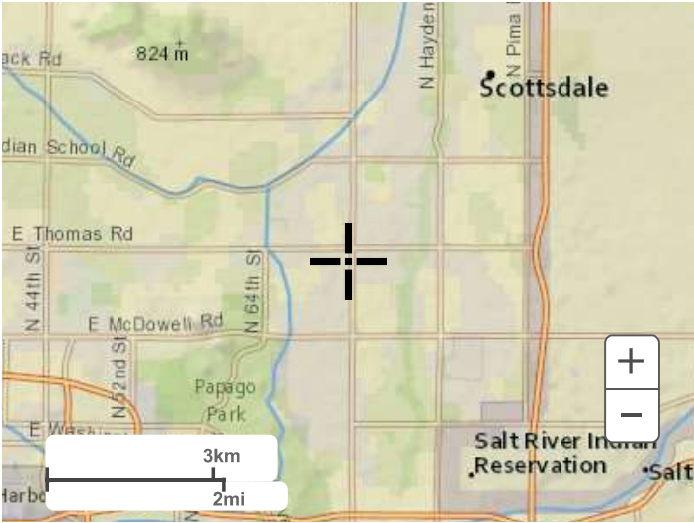
NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Tue Jun 16 11:50:11 2020

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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

Hydraulic Analysis Report

Project Data

Project Title: 2004085 NWC Scottsdale Rd & Continental Dr

Designer:

Project Date: Tuesday, June 16, 2020

Project Units: U.S. Customary Units

Notes:

Channel Analysis: New Driveway/Sidewalk Conveyance

Notes:

Input Parameters

Channel Type: Custom Cross Section

Cross Section Data

Elevation (ft)	Elevation (ft)	Manning's n
0.00	28.00	0.0150
5.00	27.95	0.0150
5.01	27.45	0.0150
29.00	27.21	0.0150
29.01	27.71	0.0150
29.50	27.71	0.0150
29.51	27.21	0.0150
36.33	27.21	0.0150
36.35	28.71	-----

Longitudinal Slope: 0.0050 ft/ft

Flow: 69.0000 cfs

Result Parameters

Depth: 0.6116 ft

Area of Flow: 16.0310 ft²

Wetted Perimeter: 33.2848 ft

Hydraulic Radius: 0.4816 ft

Average Velocity: 4.3042 ft/s

Top Width: 31.3356 ft

Froude Number: 1.0605

Critical Depth: 0.6319 ft

Critical Velocity: 4.1399 ft/s

Critical Slope: 0.0044 ft/ft

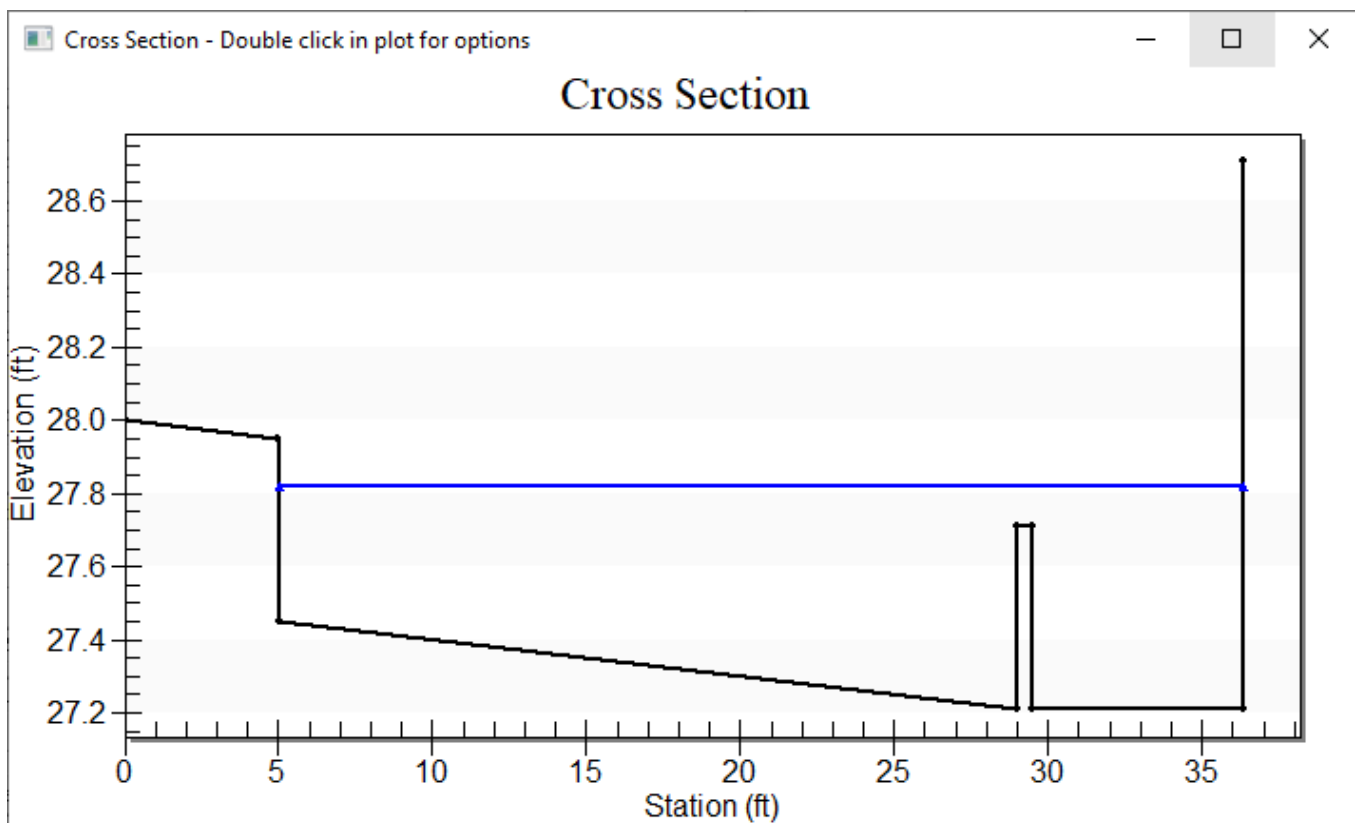
Critical Top Width: 31.34 ft

Calculated Max Shear Stress: 0.1908 lb/ft²

Calculated Avg Shear Stress: 0.1503 lb/ft²

Composite Manning's n Equation: Lotter method

Manning's n: 0.0150



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Existing Drainage Openings (4.3+3.9)x1.4

Rectangular

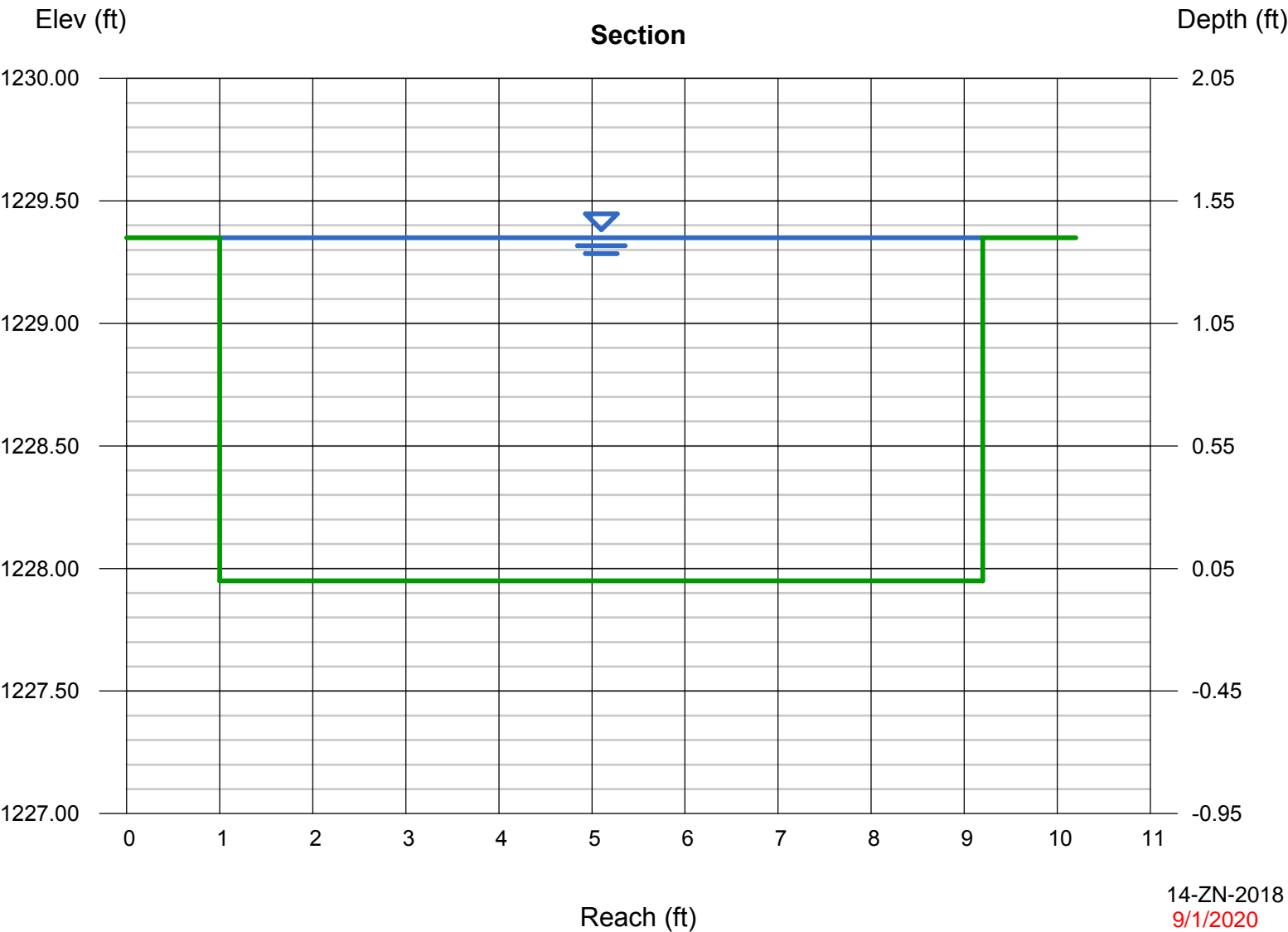
Bottom Width (ft)	= 8.20
Total Depth (ft)	= 1.40
Invert Elev (ft)	= 1227.95
Slope (%)	= 1.00
N-Value	= 0.015

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

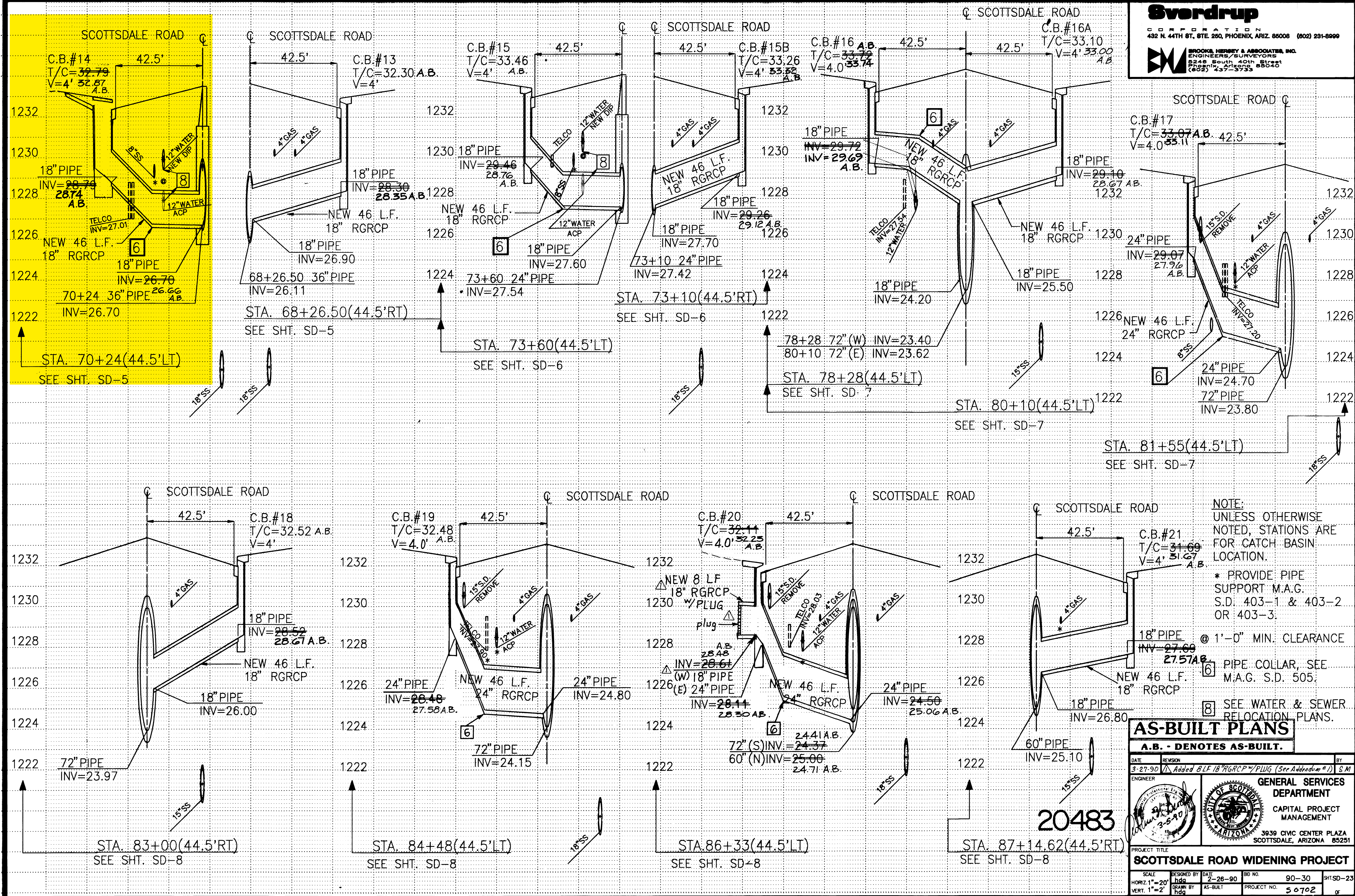
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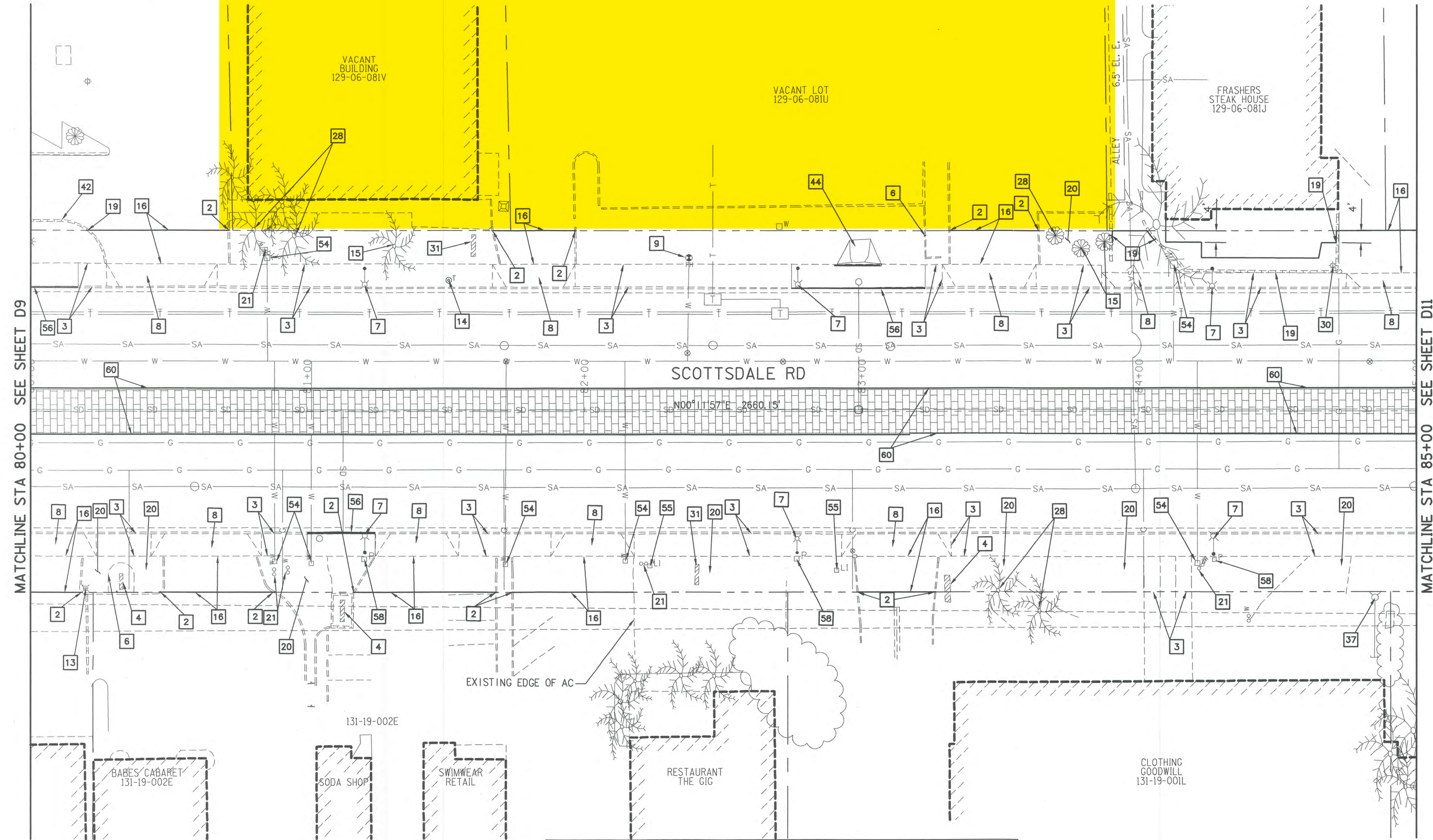
Depth (ft)	= 1.40
Q (cfs)	= 117.02 > Q100=69 cfs
Area (sqft)	= 11.48
Velocity (ft/s)	= 10.19
Wetted Perim (ft)	= 11.00
Crit Depth, Yc (ft)	= 1.40
Top Width (ft)	= 8.20
EGL (ft)	= 3.02



APPENDIX A-8

Scottsdale Road As-Builts



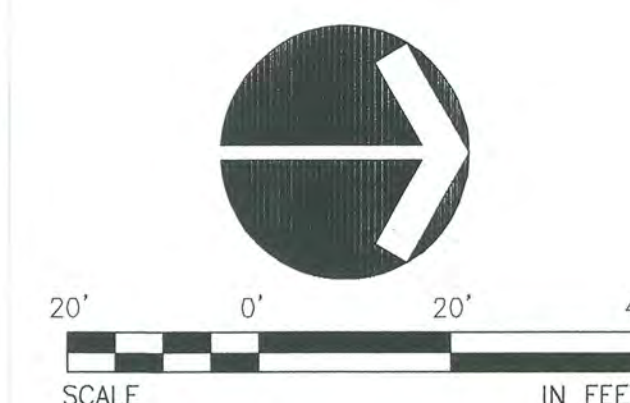


DEMOLITION NOTES

	DESCRIPTION	UNIT	QUAN
2	SAWCUT AND REMOVE EXISTING CONCRETE CURB.	LF	200
3	SAWCUT AND REMOVE EXISTING CONCRETE SIDEWALK.	SF	5450
4	EXISTING SIGN/STRUCTURE TO REMAIN.		
6	REMOVE EXISTING LANDSCAPE HEADER CURB.	LF	25
7	EXISTING STREET LIGHT AND POLE TO REMAIN.		
8	EXISTING CONCRETE DRIVEWAY ENTRANCE TO REMAIN.		
9	RELOCATE EXISTING FIRE HYDRANT PER ROADWAY IMPROVEMENT PLANS.		
13	EXISTING PRIVATE LIGHT AND POLE TO REMAIN.		
14	EXISTING MANHOLE TO REMAIN		
15	EXCAVATE AND REMOVE EXISTING TREE/ROOTBALL.	EA	3
16	SAWCUT AND REMOVE EXISTING A.C. PAVEMENT.	SY	330
19	REMOVE EXISTING CONCRETE/CMU WALL.	LF	100
20	SALVAGE AND REPLACE EXISTING LANDSCAPE MATERIAL WITHIN LIMITS OF IMPROVEMENTS AND MEDIANS WHERE APPLICABLE, SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION.		
21	RELOCATE EXISTING BACKFLOW PREVENTER PER ROADWAY IMPROVEMENT PLANS.		
28	CONTRACTOR TO PROTECT EXISTING TREE IN PLACE.		
30	RELOCATE EXISTING PRIVATE LIGHT AND POLES, SEE P SHEETS FOR RELOCATION.	EA	1
31	RELOCATE EXISTING BUSINESS SIGN PER ROADWAY IMPROVEMENT PLANS.		
37	EXISTING FDC TO REMAIN IN PLACE.		
42	EXISTING CMU/RETAINING WALL TO REMAIN.		
44	SAWCUT AND REMOVE EXISTING CONCRETE SPILLWAY.	EA	1
54	RELOCATE EXISTING WATER METER. SEE URBAN DESIGN PLANS FOR INFORMATION.		
55	RELOCATE EXISTING IRRIGATION FACILITIES PER ROADWAY PLANS.		
56	EXISTING CATCH BASIN TO REMAIN AND BE PROTECTED IN PLACE.		
58	RELOCATE ELECTRICAL JUNCTION BOX PER SRP PLANS.		
60	SAWCUT AND REMOVE EXISTING MEDIAN PAVERS.	SF	8480

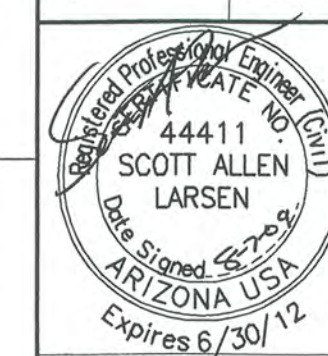
NOTE TO CONTRACTOR:

1. ALL VEGETATION AND PLANTING MATERIAL WITHIN THE RIGHT-OF-WAY AND MEDIANS SHALL BE REMOVED, AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED ON THE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING SHRUBS, TREES, AND PLANTS AND ADJUST THEIR BID ACCORDINGLY. SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION REGARDING INDIVIDUAL PLANTS REMAINING IN PLACE.
2. ALL EXISTING UTILITY APPURTENANCES WITHIN THE EXISTING MEDIAN SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED ON THE PLANS. ALL SIGNAGE WITHIN THE EXISTING MEDIANS SHALL BE REMOVED AND SALVAGED UNLESS OTHERWISE NOTED. ALL VEGETATION WITHIN THE EXISTING MEDIANS SHALL BE REMOVED UNLESS OTHERWISE NOTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE EXISTING MEDIAN IMPROVEMENTS AND ADJUST THEIR BID ACCORDINGLY.
3. EXISTING COS IRRIGATION CONTROLLERS AND BACKFLOW PREVENTERS THAT ARE TO BE REMOVED SHALL BE SALVAGED AND RETURNED TO COS IRRIGATION DEPT.



(602)263-1100
BLUE STAKE
TWO WORKING DAYS
BEFORE YOU DIG, CALL
OUTSIDE MARICOPA COUNTY
1-800-602-STAKE-

otak
Incorporated
51 W. Third Street, Suite 200
Tempe, Arizona 85281
Phone: (480) 557-6600
FAX: (480) 557-6601



PROJECT TITLE
SCOTTSDALE ROAD STREETSCAPE IMPROVEMENTS
ROOSEVELT ST TO EARLL DR

SCALE	DESIGNED BY	DATE	BID NO.	SHT.
HORIZ. 1"=20'		04/09	09PB60	D10
VERT. 1"=20'	DRAWN BY	AS-BUILT	PROJECT NO.	
			DO205	18 OF 162

MATCHLINE STA 80+00 SEE SHEET P9



1. SEE DEMOLITION PLAN FOR ALL REMOVAL INFORMATION.
2. SEE SS PLAN SHEETS FOR ALL SIGNAGE AND STRIPING INFORMATION.
3. ALL TRAFFIC EQUIPMENT, EXCEPT SWITCHING CABINETS AND TRAFFIC SIGNAL CONTROLLERS, TO BE PAINTED WESTERN RESERVE.
4. SEE SHEET P30 FOR SHADE STRUCTURE LOCATION ENLARGEMENTS.

CALLOUT	STATION	OFFSET	GRADE	GRADE
A10	81+96.82	60.76' LT	TW=36.00	BW=34.50
B10	83+22.53	60.64' LT	TW=36.00	BW=34.70

75

ASBESTOS

REGISTERED LAND SURVEYOR

CERTIFICATE NO.

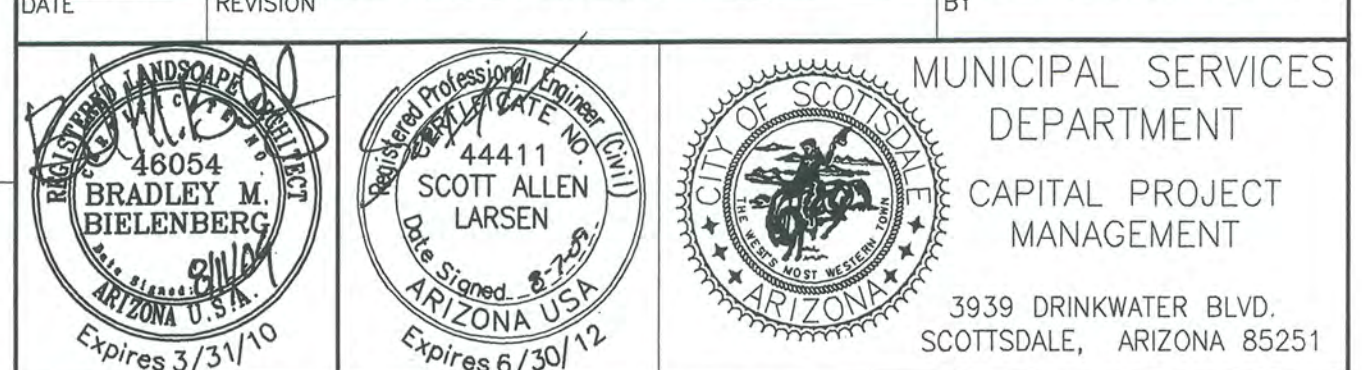
35833

JASON A. SEGNERI

Date signed 11/12/12

ARIZONA U.S.A.

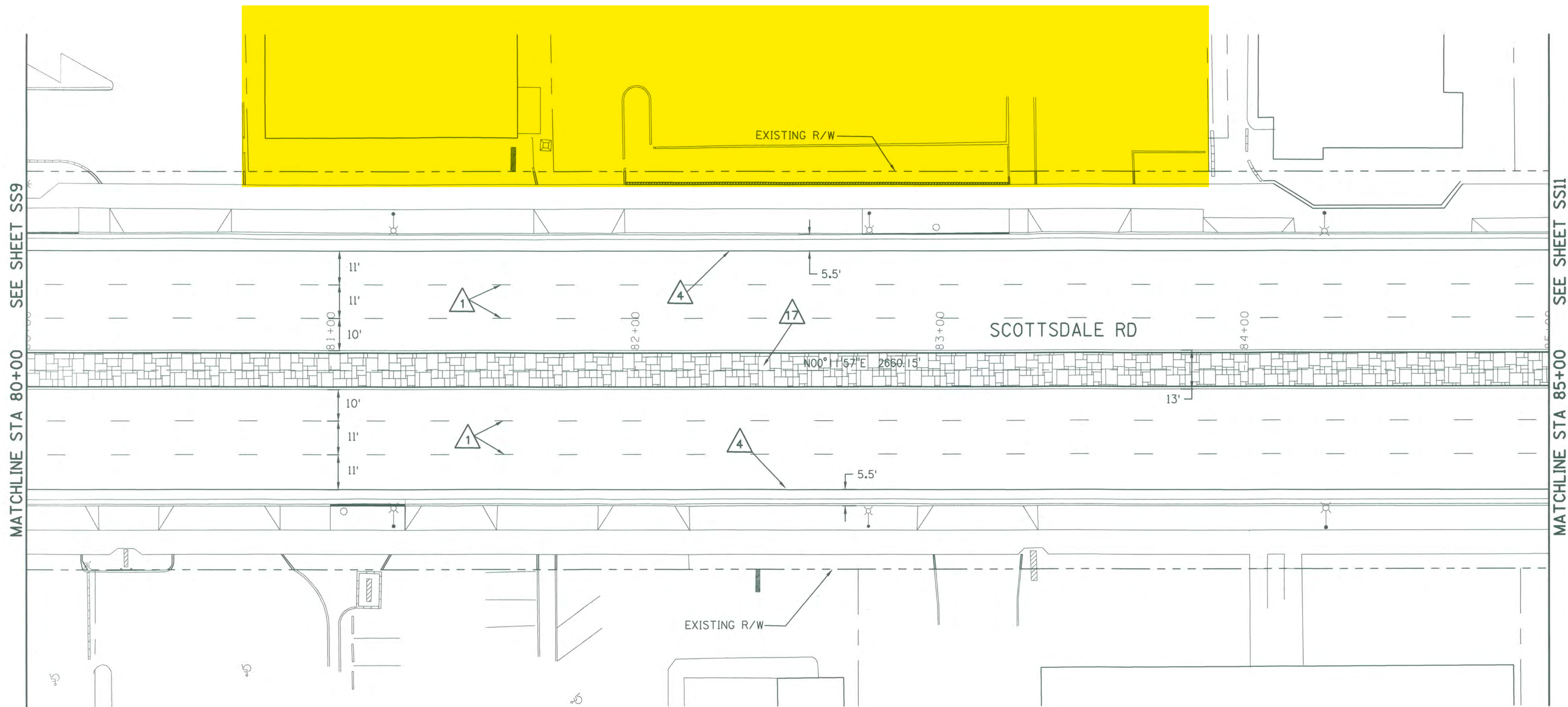
EXPIRES 3/31/2013



SCALE	DESIGNED BY	DATE	BID NO.	SHT.
HORIZ.		04/09	09PB60	P10
VERT.	DRAWN BY	AS-BUILT	PROJECT NO. 30588	37 OF 162



190
191
192
500
R510
K230
500
380
021
090



SIGNING & STRIPING NOTES

Description	Unit	Quan
1 4" WHITE SKIP LINES (10' STRIPE, 40' O.C., WHITE TYPE G-1 RPM'S CENTERED IN GAP)	LF EA	2000 50
4 8" SOLID WHITE LINE	LF	2000
17 INSTALL CONTINUOUS LEFT TURN LANE PER DETAIL, SHEET SS2	LF	500

NOTE TO CONTRACTOR:

1. ALL EXISTING SIGNS WITHIN THE RIGHT-OF-WAY SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED ON THE PLANS. ALL EXISTING SIGNS MOUNTED ON TRAFFIC OR LIGHT POLES SHALL REMAIN PROTECTED IN PLACE UNLESS OTHERWISE NOTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING SIGNAGE AND ADJUST THEIR BID ACCORDINGLY.
2. ALL EXISTING STRIPING WHICH CONFLICTS WITH THESE IMPROVEMENTS SHALL BE OBLITERATED. ALL EXISTING STRIPING AT INTERSECTIONS SHALL BE EITHER EXTENDED IN LIKE KIND OR OBLITERATED TO TIE-IN TO THE PROPOSED CROSSWALK IMPROVEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING STRIPING AND ADJUST THEIR BID ACCORDINGLY.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE FINAL LOCATIONS OF ALL FIRE HYDRANTS AND REMOTE FIRE DEPARTMENT CONNECTIONS, AND APPLY 2-WAY REFLECTIVE, BLUE, TYPE F RAISED PAVEMENT MARKERS AT THEIR LOCATIONS IN ACCORDANCE AND COMPLIANCE WITH CITY OF SCOTTSDALE REQUIREMENTS AND STANDARDS.



51 W. Third Street, Suite 201
Tempe, Arizona 85281
Phone: (480) 557-6870
FAX: (480) 557-6560

SIGNING AND STRIPING PLAN 100%

DATE

REVISION

BY

MUNICIPAL SERVICES
DEPARTMENT
CAPITAL PROJECT
MANAGEMENT
3939 DRINKWATER BLVD.
SCOTTSDALE, ARIZONA 85251

PROJECT TITLE
SCOTTSDALE ROAD STREETSCAPE IMPROVEMENTS
ROOSEVELT ST TO EARLL DR

SCALE	DESIGNED BY	DATE	BID NO.	SHT.
HORIZ. 1"=20' VERT. 1"=20'	AS-BUILT	04/09	09PB60 DO205	SS10 73 OF 162



20' 0' 20' 40'
SCALE IN FEET

APPENDIX A-9

Warning and Disclaimer of Liability

The Drainage and Floodplain Regulations and Ordinances of the City of Scottsdale are intended to “minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding caused by the surface runoff of rainfall” (Scottsdale Revised Code §37-16).

As defined in S.R.C. §37-17, a flood plain or “*Special flood hazard* area means an area having flood and/or flood related erosion hazards as shown on a FHBM or FIRM as zone A, AO, A1-30, AE, A99, AH, or E, and those areas identified as such by the floodplain administrator, delineated in accordance with subsection 37-18(b) and adopted by the floodplain board.” It is possible that a property could be inundated by greater frequency flood events or by a flood greater in magnitude than a 100-year flood. Additionally, much of the Scottsdale area is a dynamic flood area; that is, the floodplains may shift from one location to another, over time, due to natural processes.

WARNING AND DISCLAIMER OF LIABILITY PURSUANT TO S.R.C §37-22

“The degree of flood protection provided by the requirements in this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Floods larger than the base flood can and will occur on rare occasions. Floodwater heights may be increased by man-made or natural causes. This article (Chapter 37, Article II) shall not create liability on the part of the city, any officer or employee thereof, or the federal government for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder.”

Compliance with Drainage and Floodplain Regulations and Ordinances does not insure complete protection from flooding. The Floodplain Regulations and Ordinances meet established local and federal standards for floodplain management, but neither this review nor the Regulations and Ordinances take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions, all of which may have an adverse affect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

I have read and understand the above. If I am an agent for an owner I have made the owner aware of and explained this disclaimer.

Plan Check No.

Owner or Agent

Date